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HEWLETT-PACKARD
SOUTHERN SALES DIVISION
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RICHMOND, VIRGINIA 23230

5100A FREQUENCY SYNTHESIZER

OPERATING AND SERVICE MANUAL

HEWLETT  PACKARD

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OPERATING AND SERVICE MANUAL

MODEL 5100A FREQUENCY SYNTHESIZER

SERIALS PREFIXED: 540-

This manual applies directly to \oplus Model 5100A Frequency Synthesizers with serial number prefix 540-.

OLDER INSTRUMENTS

This manual with changes outlined in Appendix I also applies to older Model 5100A instruments with serial number prefix 520-, 442-, 427-, 420-, 408-, 401-, or 351- (see Paragraph 1-22).

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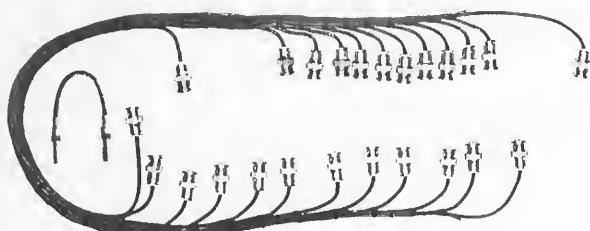
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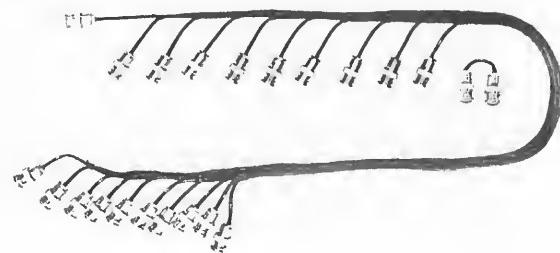
**model
5100A**



accessory cables



power cord



rack mounting kit

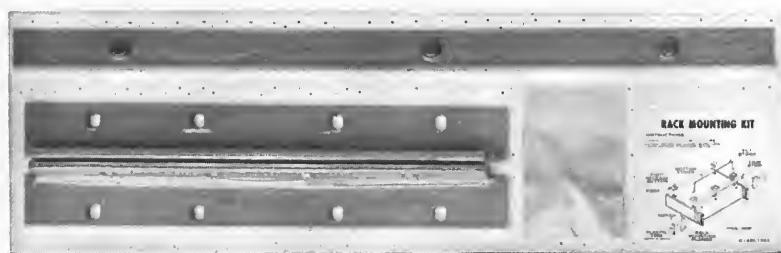


Figure 1-1. Model 5100A and Accessories

SECTION I

GENERAL INFORMATION

1-1. INTRODUCTION.

1-2. The Model 5100A Frequency Synthesizer, when driven by the Model 5110A Synthesizer Driver, provides any output frequency from 0.01 cps to 50 Mc, selectable in steps as small as 0.01 cps. The output frequency is selected by ten columns of pushbuttons, arranged for rapid frequency selection, or by remote contact closures. The output frequency is derived from a precision single frequency source through direct synthesis, a technique which translates the long-term stability and spectral purity of the source to the selected output.

1-3. A very clean output signal is provided over the entire frequency range. A high order of spectral purity is essential for accurate doppler measurements, microwave spectroscopy, narrow band telemetry or communications, and similar applications. It is possible to obtain output signals with a spurious content at least 90 db below the selected output.

1-4. The 5110A Synthesizer Driver generates twenty-two spectrally pure signals from the standard signal. These twenty-two frequencies are then fed to the 5100A Frequency Synthesizer by means of rear panel BNC connectors (Figure 2-2), and are continuously available. The variable output signal is synthesized from these fixed frequencies by a series of arithmetic operations.

1-5. Since no phase-locked loops are involved, switching from one output frequency to another can be accomplished very rapidly, either from the front panel pushbuttons or remotely. Less than one millisecond is required to change output frequency. The two oscilloscope trace reproductions in Figure 1-2 are typical results. For applications requiring rapid frequency selection, the Model 5100A is arranged for remote control through rear connectors.

1-6. OPERATIONAL FEATURES.

1-7. REMOTE CONTROL.

1-8. Less than one millisecond switching time offers wide control flexibility. Any frequency or search oscillator position that can be selected by front panel pushbuttons may also be remotely selected. Three fifty-pin connectors located on rear panel (Figure 3-2) provide pins corresponding to each front panel pushbutton position, a ground connection, and a -12.6 volt line for use in remote programming. The -12.6 volts is available in two arrangements--continuous and switched (present when REMOTE mode is selected at front panel). This lends additional versatility since it enables the use of a combination of remote and local programming.

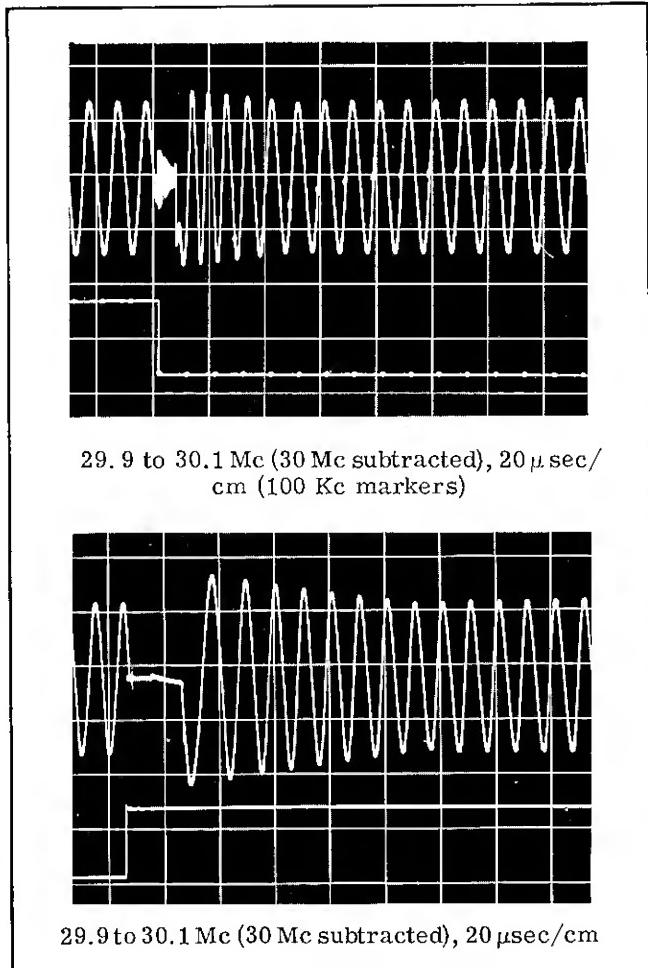


Figure 1-2. High Speed Switching

1-9. An actual contact closure such as a relay is not required for remote control of the Synthesizer. The required -12.6 volts dc may be applied to the selected pin electronically.

1-10. Figure 1-3 is representative of one of the many applications made possible by the Synthesizer's remote programming capability. This plot of the response of a single sideband crystal filter was obtained by programming the Synthesizer to generate frequencies in a variety of incremental steps. Less than one minute was required for the complete plot.

1-11. SEARCH OSCILLATOR.

1-12. Continuous tuning and sweep capability adds versatility for a wide variety of applications. The search oscillator is an L-C oscillator which allows the operator to continuously "search" any significant column from 100 Kc to 0.01 cps, either manually by

Table 1-1. Specifications

OUTPUT FREQUENCY: Dc to 50 Mc.

DIGITAL FREQUENCY SELECTION:

0.01 cps through 10 Mc per step. Selection by front panel push-button or by remote switch closure. Any change in frequency may be accomplished in less than 1 millisecond.

OUTPUT VOLTAGE:

1 volt rms ± 1 db from 100 Kc to 50 Mc. 1 volt rms $+2$ db, -4 db from 50 cps to 100 Kc, into a 50-ohm resistive load. Nominal source impedance is 50 ohms. 15 millivolts rms minimum open circuit from 100 Kc down to dc, at separate rear output connector, source impedance of 10,000 ohms with shunt capacitance approximately 70 pf.

SEARCH OSCILLATOR:

A search oscillator provides continuously variable frequency selection with an incremental range of 0.1 cps through 1 Mc. Manual or external voltage (-1 to -11 volts) control with linearity of $\pm 5\%$.

SIGNAL-TO-PHASE NOISE RATIO:

Greater than 54 db in a 30-Kc band centered on the signal (excluding a 1 cps band centered on the signal).

SIGNAL-TO-AM NOISE RATIO (above 100 Kc):

Greater than 74 db in a 30-Kc band.

RMS FRACTIONAL FREQUENCY DEVIATION
(with a 30-Kc noise bandwidth):

| Averaging Time | Output Frequency | | | |
|----------------|--------------------|---------------------|---------------------|---------------------|
| | 1 Mc | 5 Mc | 10 Mc | 50 Mc |
| 10 ms | 3×10^{-8} | 6×10^{-9} | 3×10^{-9} | 6×10^{-10} |
| 1 second | 3×10^{-8} | 6×10^{-11} | 3×10^{-11} | 1×10^{-11} |

SPURIOUS SIGNALS:

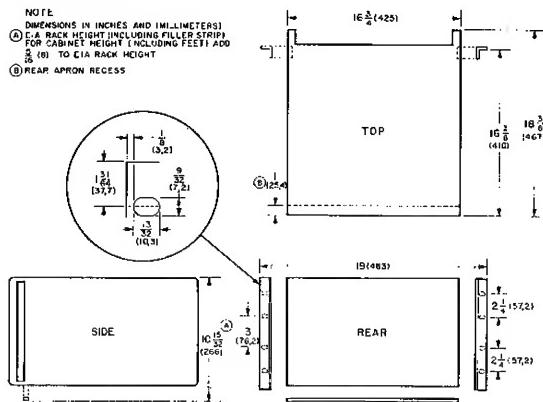
Non-harmonically related signals are at least 90 db below the selected frequency.

HARMONIC SIGNALS:

30 db below the selected frequency (when terminated in 50 ohms).

Note: When the 5110A Driver utilizes an external frequency standard, this will affect the stability and spectral purity of the output. Performance data stated above are based on internal frequency standard or indicate Synthesizer contribution to overall performance with external standard.

DIMENSIONS:



WEIGHT: Net 75 lbs (34 kg)
Shipping 127 lbs (58 kg)

EQUIPMENT FURNISHED:

05100-6180 Decade Test cable, 05100-6066 output cable, 05100-6212/13 cable assembly connects 5100A Synthesizer to 5110A Driver. Permits rack mounting of up to two 5100A1s immediately above and/or below the 5110A Driver. A special-length cable assembly will be required for other mounting arrangements.

SPECIAL CABLE:

If a special-length cable assembly is required, order spec C05-5110A. Specify configuration and length (max separation 50 feet). Cable is supplied in five-ft. sections only.

GENERAL

OPERATING TEMPERATURE RANGE: 0 to $+55^{\circ}\text{C}$.

INTERFERENCE:

Complies with MIL-I-26600, Class 1 and 3, MIL-I-6181D.*

SUSCEPTIBILITY:

Complies with MIL-I-26600, Class 1 and 3, MIL-I-6181D.

POWER:

115 or 230 volts $\pm 10\%$, 50 to 400 cycles, 35 watts each unit (independent supplies).

* Interference compliance requires that the 5100A and 5110A are connected by a low inductance path such as adjacent rack mounting.

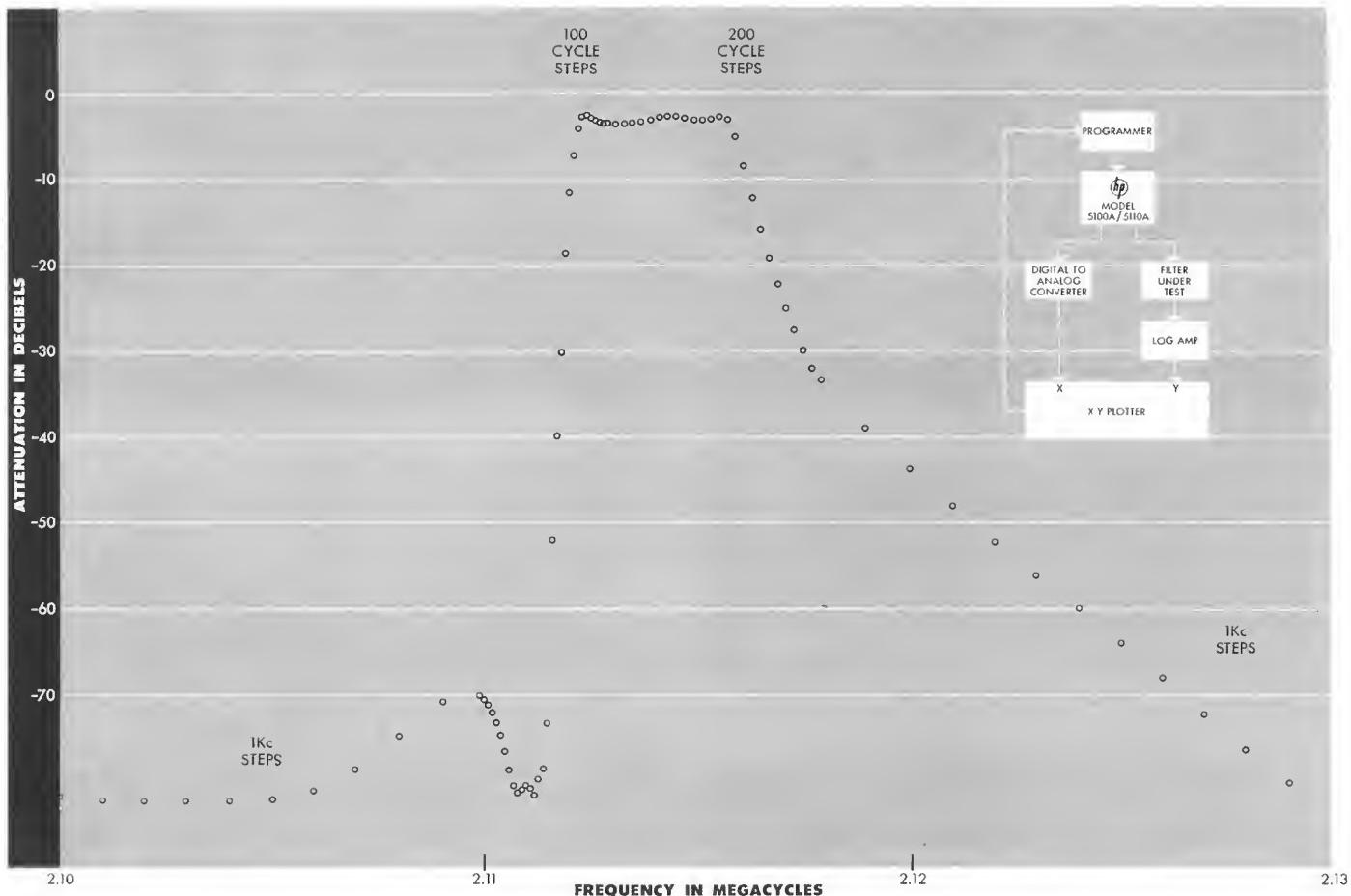


Figure 1-3. Crystal Filter Response Plot

front panel dial or remotely by application of a suitable voltage. The typical voltage vs frequency characteristic is shown in Figure 1-4. The approximate slope is 10% of the selected column's range per volt.

1-13. If the search oscillator is used, the stability of the Synthesizer output is determined by either that

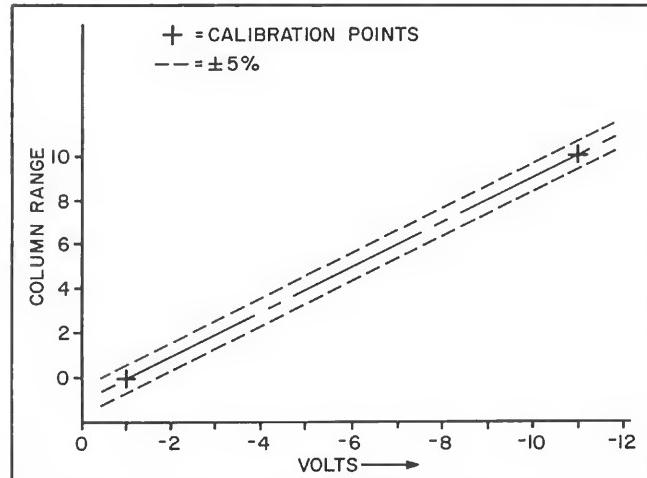


Figure 1-4. Voltage vs Frequency Characteristics of the Search Oscillator

of the standard instrument or that of the search oscillator. The search oscillator has a root-mean-square deviation of approximately 1 cycle (one second average) if used in the most significant column that can be searched (100 Kc steps). This Δf_{rms} is reduced by a factor of 10 for each less significant column that is searched. As an example, consider that the search oscillator is used in the 10 Kc step column, at an output frequency in the 10 Mc region. The instability in the output frequency due to the search oscillator is then:

$$\frac{\Delta f_{rms}}{\Delta f_{out}} = \frac{0.1 \text{ cps}}{10 \times 10^6} = 1 \times 10^{-8}$$

At this output frequency, and using one second averaging, the short term stability of the Synthesizer itself is on the order of 3×10^{-11} . Consequently, the search oscillator governs in this case.

1-14. The search oscillator may be frequency modulated from an external source (sinewave) at a maximum rate of 1 Kc while retaining the voltage control calibration.

1-15. The plots displayed in Figures 1-5, 1-6, and 1-7 are representative of the impressive versatility of

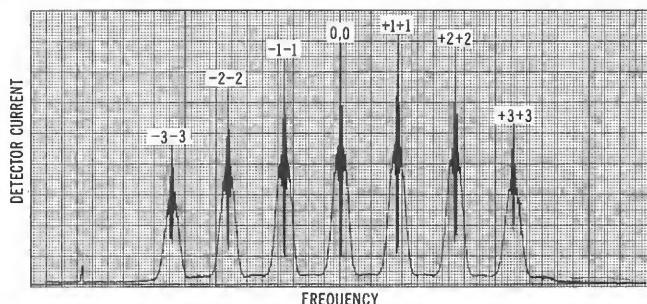


Figure 1-5. Spectral Lines of Cs^{133}

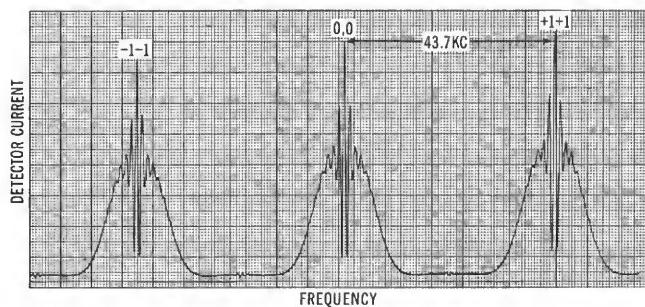


Figure 1-6. Spectral Lines of Cs^{133} Expanded

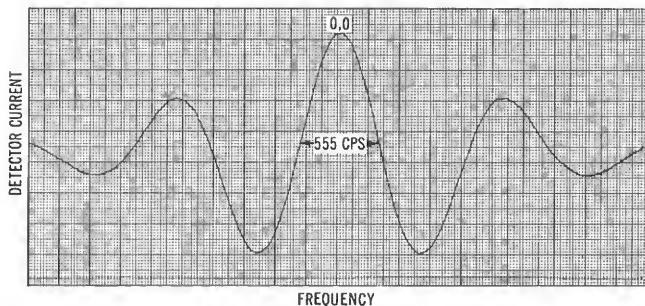


Figure 1-7. Spectral Lines of Cs^{133}
Expanded Further

the Frequency Synthesizer. The microwave spectral lines of Cs^{133} were obtained using the system shown in Figure 1-8.

1-16. The frequency translator adds the Synthesizer output to a fixed harmonic of the stable 5 Mc source to provide an excitation frequency of 9192+ Mc. A desired significant column of the Synthesizer output is continuously swept by employing the external voltage control feature of the Synthesizer's search oscillator. The three plots were obtained by searching successively less significant columns. This type of system greatly simplifies the investigation of the homogeneity of the small magnetic field used in the region where Cesium hyperfine transitions occur. For further details see the Hewlett-Packard Journal, Vol. 15, No. 15, Dec. 1 1963.

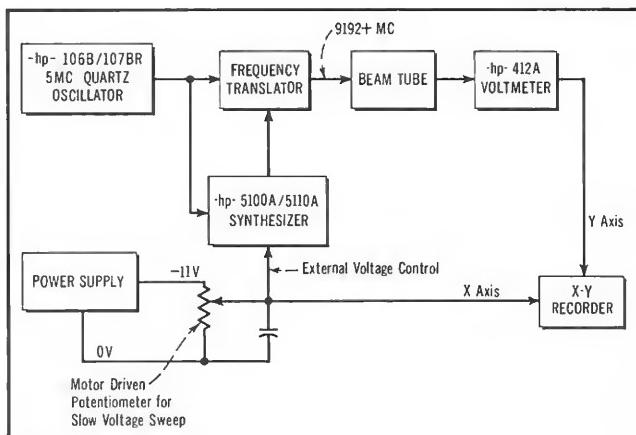


Figure 1-8. System Used to Obtain Spectral Lines of Cs^{133} shown in Figures 1-5, 1-6, and 1-7.

1-17. SPECTRAL PURITY AND SHORT TERM STABILITY.

1-18. Many applications require that a signal be multiplied into the microwave region. If the frequency multiplying device is broadband, the ratio of total sideband power to signal power increases as the square of the multiplying factor. Since the total power in a frequency modulated wave is constant, the increased sideband power must come from the carrier. The spectrum of the signal begins to "spread" since the increased sideband amplitude causes the intermodulation between sidebands to become appreciable. It is desirable, then, that the original signal have the highest possible signal to phase noise ratio. Figure 1-9 shows the log plot of phase noise present on the output signal of the 5100A/5110A at 49 Mc. Figure 1-10 is a wave analyzer's approximation to the voltage spectrum of a 1Kc beat between two independent synthesizers individually multiplied from 2.2 Mc to 8.75 Gc. Narrow width here of <1 cps indicates the high quality of the original synthesizer signal.

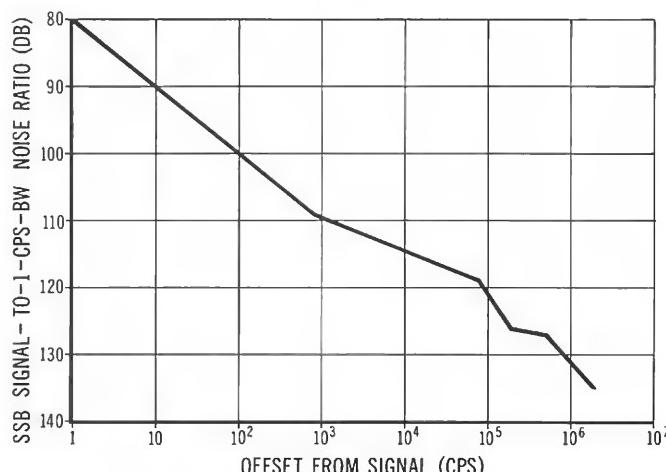


Figure 1-9. Log Plot of Phase Noise on Output Signal of 49 Mc

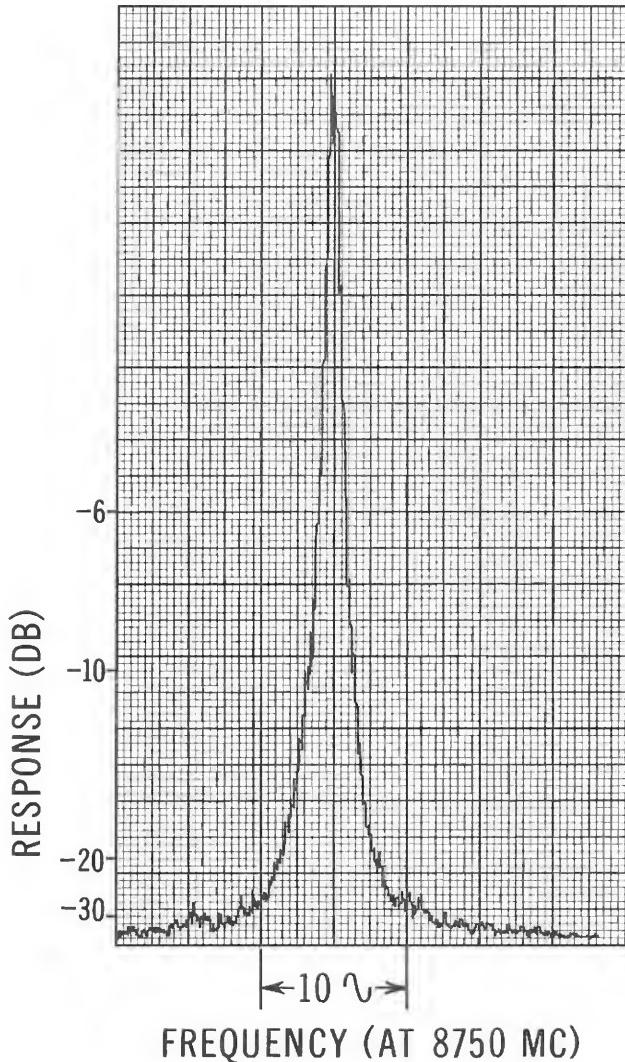


Figure 1-10. Narrow Width Indicates High Quality of Original 5110A Signal

1-19. The specified values for RMS fractional frequency deviation at various averaging times and at various output frequencies represent the standard deviation of the short term frequency instability due to random noise. For example, the value given for one second averaging at an output of 50 Mc is 6×10^{-11} . This corresponds to an RMS or standard frequency deviation of 0.0030 cps. In other words, 68.3% of all observed frequency variations for measurement times of one second will differ from the carrier by less than plus or minus that amount. 99.7% of all frequency variations will differ from the carrier by less than ± 0.0090 cps. All statistical data are based on one hundred samples.

1-20. MODULAR CONSTRUCTION.

1-21. Solid-state modular construction has been used throughout the 5100A. The modular concept enables the Synthesizer to meet the stringent demands regarding spurious signals since the isolation that it affords minimizes spurious coupling. It also enhances serviceability. Careful design and quality control insure that all modules are interchangeable from one instrument to another.

1-22. INSTRUMENT IDENTIFICATION.

1-23. Hewlett-Packard uses a two-section, eight-digit serial number to identify instruments. The serial number is located on the rear panel of the instrument. The first three digits (serial prefix) identify a series of instruments; the last five digits refer to a specific instrument in that series. If the first three digits of your instrument serial number do not appear on the title page of this manual, there are differences between the manual and your instrument which are described in Appendix I (Serial Prefix 520- and below) or in a change sheet included with the manual. If the change sheet is missing, the information can be supplied by your nearest Hewlett-Packard field or sales office.

1-24. SPECIFICATIONS.

1-25. Table 1-1 lists the technical specifications for the Model 5100A Frequency Synthesizer. Performance data stated in the table are based on the internal frequency standard of the 5110A or indicate Synthesizer contribution to overall performance with an external standard. Stability and spectral purity of the 5100A Frequency Synthesizer will be partially determined by the characteristics of the external standard if used.

1-26. APPLICATIONS.

1-27. The Model 5100A, when driven by the Model 5110A Synthesizer Driver, provides a general purpose source of precisely known, spectrally pure, easily selected frequencies. It can be remotely programmed for use in a variety of automatic measurement systems such as filter or transmission line test sets. It can be used as the local oscillator in secure communications systems where carrier frequencies must be shifted rapidly and often to avoid compromise of confidential communications. The 5100A offers unique advantages for specialized applications in microwave spectroscopy, telemetry, and radar.

SECTION II

INSTALLATION

2-1. INITIAL INSPECTION.

2-2. MECHANICAL CHECK. If damage to the shipping carton is evident, ask that the carrier's agent be present when the instrument is unpacked. Inspect the instrument for mechanical damage (scratches, dents, broken knobs, etc.). Also check the cushioning material for signs of severe stress.

2-3. PERFORMANCE CHECK. The electrical performance of the Model 5100A should be verified as soon as possible after receipt. A performance check that is suitable for incoming inspection is given in Paragraph 5-10.

2-4. CLAIM FOR DAMAGE. If the Model 5100A is mechanically damaged or fails to meet specifications on receipt, notify the carrier and the nearest Hewlett-Packard field or sales office immediately. Field and sales offices are listed at the back of this manual. Retain the shipping carton and the padding material for the carrier's inspection. The field or sales office will arrange for the repair or replacement of your instrument without waiting for the claim against the carrier to be settled.

2-5. STORAGE AND SHIPMENT.

2-6. PACKAGING. To protect valuable electronic equipment during storage or shipment always use the best packaging methods available. Your Hewlett-Packard field or sales office can provide packing material such as that used for original factory packaging. Contract packaging companies in many cities can provide dependable custom packaging on short notice. Here are two recommended packaging methods:

a. **RUBBERIZED HAIR.** Cover painted surfaces of instrument with protective wrapping paper. Pack instrument securely in strong corrugated container (350 lb/sq in. bursting test) with 2-inch rubberized hair pads placed along all surfaces of the instrument. Insert fillers between pads and container to ensure a snug fit. Mark the box "Delicate Instrument" and seal with strong tape or metal bands.

b. **EXCELSIOR.** Cover painted surfaces of instrument with protective wrapping paper. Pack instrument in strong corrugated container (350 lb/sq in. bursting test) with a layer of excelsior about 6 inches thick packed firmly against all surfaces of the instrument. Mark the box "Delicate Instrument" and seal with strong tape or metal bands.

2-7. RACK INSTALLATION.

2-8. The Model 5100A is ready for bench operation as shipped from the factory. Additional parts necessary for rack mounting are packaged with the instrument. To convert for rack installation, refer to Figure 2-1 and proceed as follows:

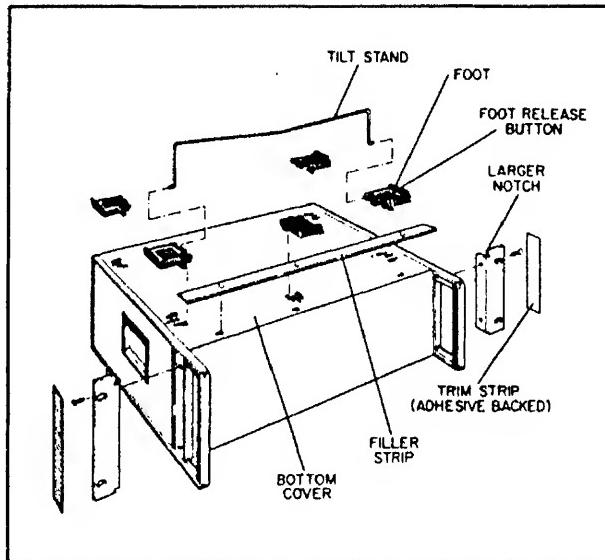


Figure 2-1. Conversion for Rack Mounting

- a. Remove tilt stand.
- b. Remove feet (press the foot-release button, slide foot toward center of instrument, and lift off).
- c. Remove adhesive-backed trim strips at front end of sides.
- d. Attach filler strip along bottom edge of front panel.
- e. Attach flanges to front end of sides (larger corner notch toward bottom of instrument). Instrument is now ready to mount in standard rack.

2-9. POWER CONNECTION.

2-10. LINE VOLTAGE. The 5100A may be operated from either 115- or 230-volt ($\pm 10\%$) 50 to 400 cps power lines. A slide switch on the rear panel permits quick conversion for operation from either voltage. Insert a narrow-blade screwdriver in the switch slot and slide the switch to the right for 115-volt operation ("115" marking exposed) or to the left for 230-volt operation ("230" marking exposed).

Note

Before connecting ac power to instrument be sure slide switch is properly positioned.

2-11. POWER CABLE. The Model 5100A is equipped with a detachable 3-wire power cable. Proceed as follows for installation:

- a. Connect flat plug (3-socket connector) to ac line jack at rear of instrument.

b. Connect plug (2-blade with round grounding pin) to 3-wire (grounded) power outlet. Exposed portions of instrument are grounded through the round pin of the plug for safety; when only 2-blade outlet is available, use connector adapter (part No. 1251-0048), then connect shortwire from side of adapter to ground.

2-12. INSTRUMENT INTERCONNECTION.

2-13. Connect the Model 5110A to the Model 5100A with cable assemblies provided as shown in Figure 2-2. Cables and connectors are marked for proper connection. If output is desired from the front panel OUTPUT connector, connect rear panel HI-LEVEL OUTPUT to the TO FRONT PANEL connector with cable provided. Output may be taken directly from the rear panel output connectors. A joining bracket kit is available for fastening the 5110A and 5100A together. The Part No. is 5060-0216.

CAUTION

The joining bracket kit is not intended to support the weight of either instrument.

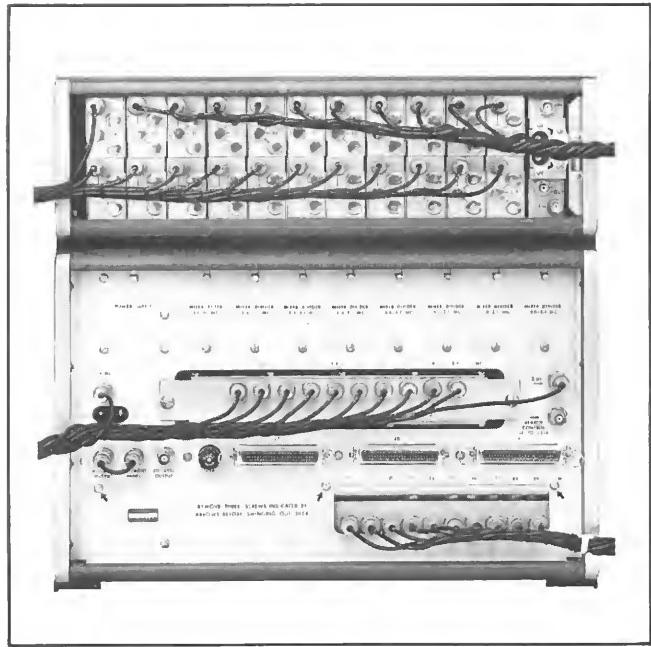


Figure 2-2. 5100A and 5110A
Cable Interconnections

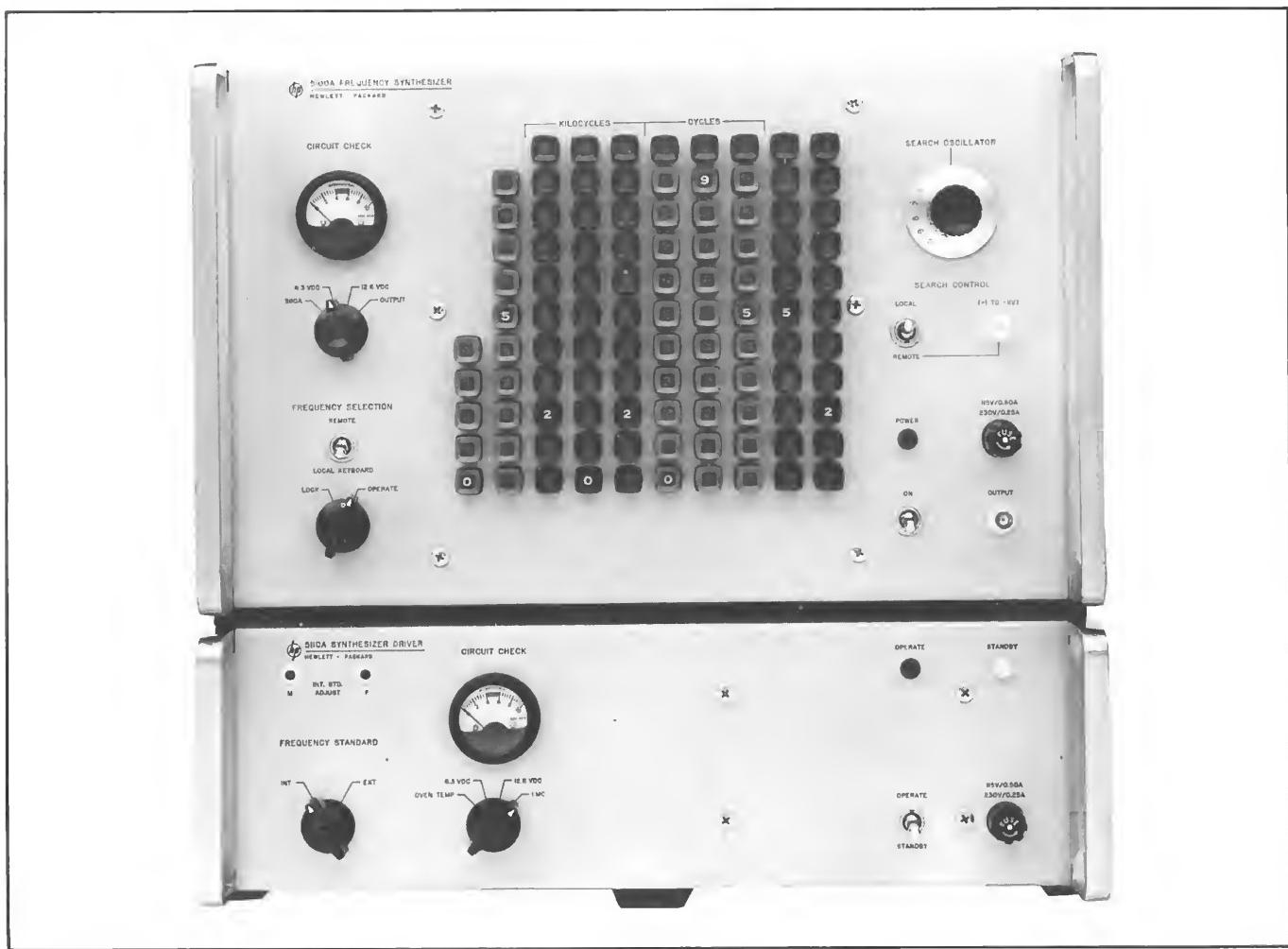


Figure 3-1. Operating Controls, Front View, Model 5100A/5110A

SECTION III

OPERATION

3-1. INTRODUCTION.

3-2. This section tells how to operate the 5110A/5100A. This is done by describing a turn on, circuit check procedure for the two instruments making up the system. A front panel view of the system is shown in Figure 3-1. The twenty-two rear panel cable connections must be made between the 5110A and the 5100A prior to turning them on as a system. See Paragraph 2-13.

3-3. OPERATION - 5110A.

3-4. TURN-ON. Plug the power cord into the line. With the OPERATE-STANDBY switch in the STANDBY position, the STANDBY light should light. Put the OPERATE-STANDBY switch in the OPERATE position. The OPERATE light should light.

Note

The oscillator oven is on anytime that the 5110A power cord is connected to the line.

3-5. CIRCUIT CHECK switch.

a. OVEN TEMP. In this position, a reading in the green section of CIRCUIT CHECK meter indicates that the oven has reached its proper operating temperature.

b. 6.3 VDC AND 12.6 VDC. Both of these positions must give a reading in the green section of CIRCUIT CHECK meter. This indicates the power supply of the 5110A is operating properly.

c. 1 MC. A reading in the green section of the CIRCUIT CHECK meter indicates that the 1-Mc signal is present and has the proper amplitude.

3-6. FREQUENCY STANDARD switch. This switch allows use of either the oscillator within the 5110A or an external oscillator.

3-7. OPERATION - 5100A.

3-8. TURN-ON. Plug the power cord into the line and set POWER switch to ON. The POWER light should light.

3-9. CIRCUIT CHECK switch.

a. 5110A. A reading in the green section of the CIRCUIT CHECK meter indicates that the 3-Mc signal from the 5110A is present.

b. 6.3 VDC AND 12.6 VDC. Both of these positions must give a reading in the green section of the CIRCUIT CHECK meter. This indicates the power supply of the 5100A is operating properly.

c. OUTPUT. A reading in the green section of the CIRCUIT CHECK meter indicates that a synthesized signal of proper amplitude is present.

CAUTION

Do not connect cable which contains a DC level to the OUTPUT jack.

3-10. FREQUENCY SELECTION switch. In the LOCAL mode of operation the switch is set to the LOCAL KEYBOARD position. When using the 5100A from a remote position, the switch is set to the REMOTE position.

3-11. LOCK-OPERATE selector. To operate the pushbuttons this switch is placed in the OPERATE position. After frequency is selected the switch may be set to the LOCK position. This prevents an accidental frequency change.

3-12. THE PUSHBUTTONS. With these pushbuttons it is possible to select five billion discrete frequencies. A button must be depressed in each column for an output signal to be present.

3-13. THE SEARCH OSCILLATOR. The output frequency of the search oscillator is controlled by varying the dc voltage to it. Turning the SEARCH OSCILLATOR dial varies the dc voltage to the search oscillator and thus varies its output frequency. The signal from the search oscillator is injected into the decade module corresponding to the column in which the "S" button is depressed. To use the SEARCH OSCILLATOR dial, the SEARCH CONTROL LOCAL-REMOTE switch must be in the LOCAL position.

3-14. If the SEARCH CONTROL-REMOTE switch is in the REMOTE position, the output of the search oscillator may be controlled by applying a dc voltage to the BNC connector labelled (-1 to -11V).

3-15. REMOTE PROGRAMMING.

3-16. Any frequency or search oscillator position that can be selected by front panel pushbuttons on the Synthesizer may be selected remotely.

3-17. Three 50-pin connectors are located on the 5100A rear panel which collectively provide one pin corresponding to each of the pushbutton positions on the front panel (see Figure 3-2). Each connector also supplies a ground connection and a -12.6 volt line from the internal power supply which may be used in remote switching. This voltage is only present when the front panel LOCAL-REMOTE switch is in the REMOTE position. An "un-switched" -12.6 volts is also available at each connector. When the switch is in the LOCAL position, voltages appear at the remote programming connectors, as shown in Table 3-1.

3-18. When switched to REMOTE, the Synthesizer pushbuttons are completely disconnected and all remote programming leads assume the "OFF" voltages. It is then necessary that a digit or "S" position be remotely selected for each column.

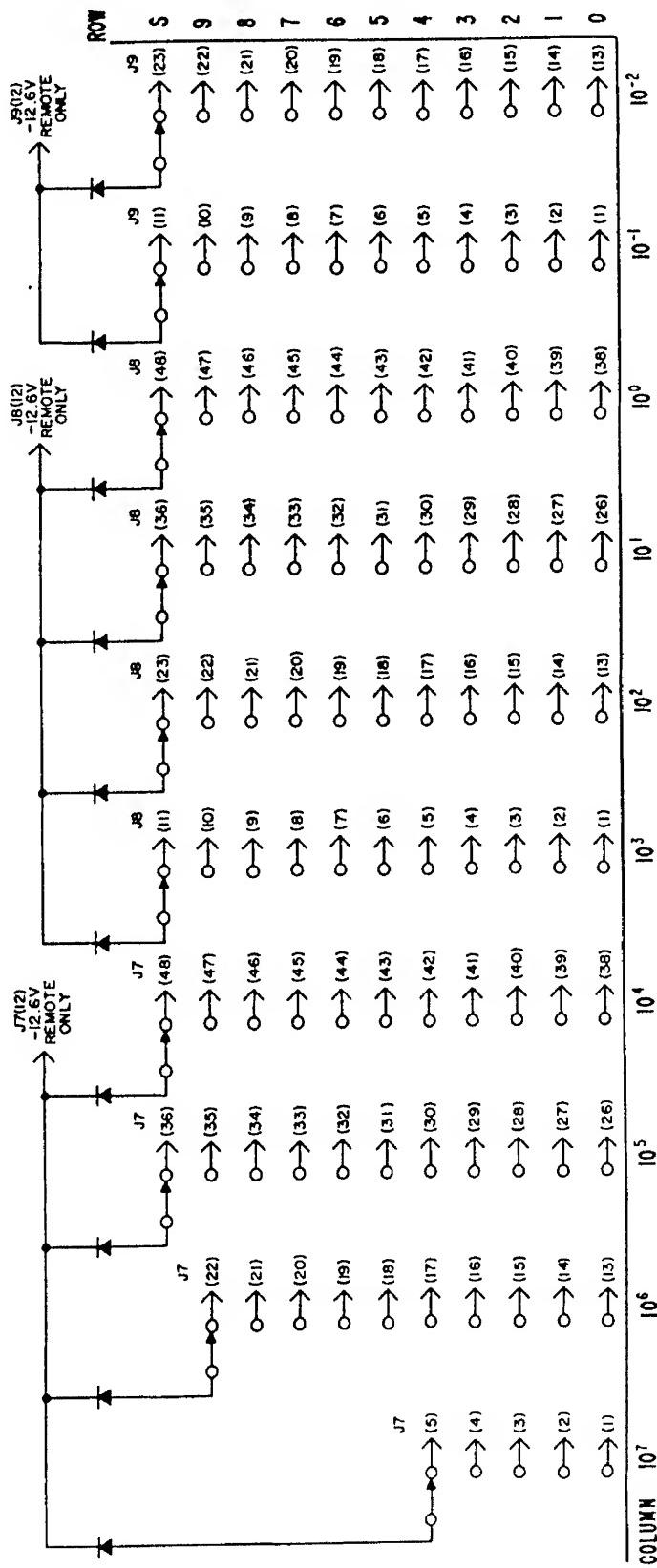
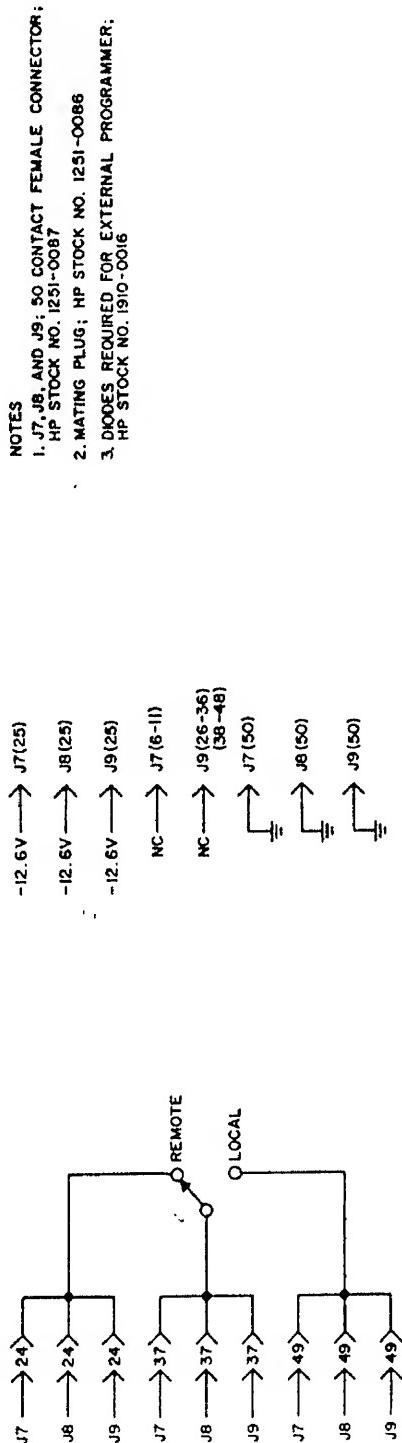


Figure 3-2. Remote Control Pin Connections of J7, J8, and J9

SECTION IV

THEORY OF OPERATION

4-1. INTRODUCTION.

4-2. The output frequencies from the Frequency Synthesizer are all derived from a single precise standard signal by the electronic performance of the operations of addition, subtraction, multiplication, and division. In order to accomplish the arithmetic operations, the Synthesizer uses mixers, dividers, and multipliers. These devices generate certain unwanted signals which tend to degrade the desired signal. For the output signal to retain the same cleanliness as the standard, some rather sophisticated design techniques have been used in the system. Considerable attention has been given to shielding and termination.

4-3. The Frequency Synthesizer consists of two modular cabinets: the 5100A Frequency Synthesizer and the 5100A Synthesizer Driver; the basic arrangement is shown in Figure 4-1.

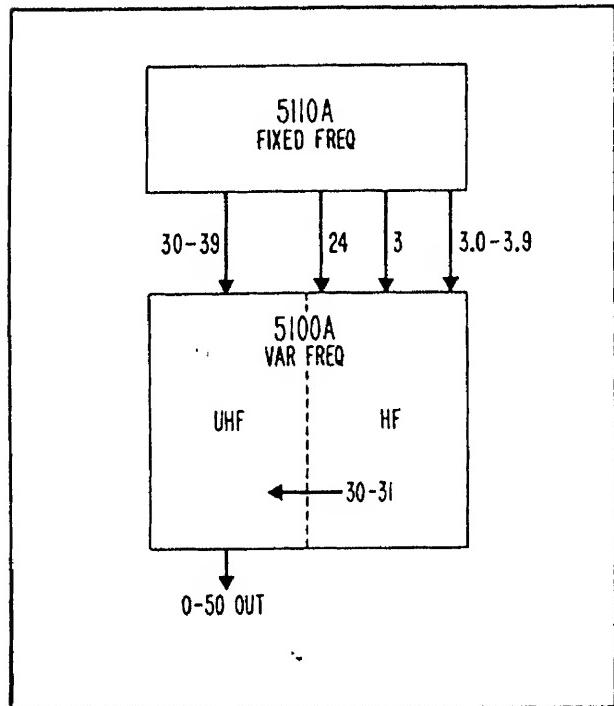


Figure 4-1. 5100A/5110A Synthesizer System Block Diagram

4-4. The 5100A Frequency Synthesizer provides the means to combine, by direct synthesis, the signals provided by the 5110A Synthesizer Driver. As shown in Figure 4-1, the 5100A is divided into an HF section and a UHF section. Figure 4-3 depicts the block diagram of the HF section. This section utilizes the 24 Mc, 3 Mc, and the 3.0 through 3.9 Mc signals from the 5110A. The latter 10 signals are fed into a diode switch matrix which is controlled by dc voltages provided either by means of front panel pushbutton control or by remote programming jacks on rear panel of the 5100A.

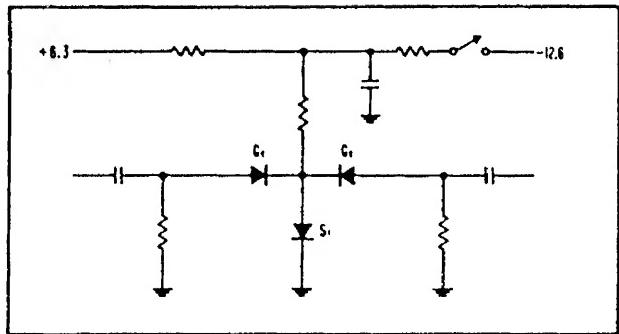


Figure 4-2. 3 to 4 Mc Diode Switch Schematic

4-5. The Diode Switch matrix enables rapid frequency selection. Figure 4-2 shows the basic circuit of the switch used in this 3 to 4 Mc matrix. In normal (open) position, a positive 6.3 vdc is applied through a resistive network to the anode of the silicon diode. The voltage drop across the conducting diode is sufficient to hold the two germanium diodes cut off. When this switch is chosen by means of remote contact closure or manual pushbutton, a negative 12.6 vdc is applied (see Figure 4-2). This causes the silicon diode to be reverse-biased. The switch will now allow the desired signal to be passed through it. These switches are embedded in blocks to achieve minimum coupling from one section of the switch to the other. The 3 to 4 Mc switch assembly contains 11 boards, one for each digit 0 through 9 and one for the "S" (search) position. Each board contains 8 diode switches of the type previously discussed. Each switch corresponds to a significant column of the selected frequency. The significant columns that control this 3 to 4 Mc matrix are 10^{-2} (0.01 cps steps) through 10^5 (100 kc steps). The limitations on switching speed are the time constants in the filtering circuits on the supply line to switch and circuit bandwidths.

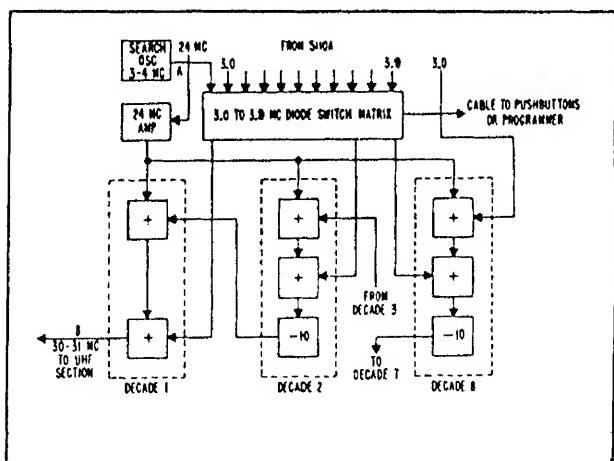


Figure 4-3. 5100A HF Section

Table 3-1. ON-OFF Switch Voltages

| Column | "ON" DIGIT | "OFF" DIGIT |
|-----------------------|------------|-------------|
| 10^7 | -12.6 vdc | +6.3 vdc |
| 10^6 | -12.6 vdc | +1.5 vdc |
| 10^5 thru 10^{-2} | -12.6 vdc | +1.5 vdc |

3-19. An actual contact closure such as a relay is not required for remote programming the Synthesizer. The connection, the application of -12.6 vdc to the selected pin, may be made electronically through a transistor.

3-20. Figure 3-3 shows the basic circuit of the type of switch used in the 3 to 4 Mc matrix. In the normal (open) position, a positive 6.3 volts is applied through a resistive network to the anode of the silicon diode. The voltage drop across the conducting diode is sufficient to hold the two germanium diodes cut off. When this particular switch is chosen by means of remote control or manual pushbutton, a negative 12.6 volts is applied as shown in Figure 3-3. This operation will cause the silicon diode to be reverse-biased. Consequently, the switch will now allow the desired signal to be passed through it. These switches are embedded in blocks to achieve minimum coupling from one section of the switch to the other. When the switch is off, attenuation is better than 110 db.

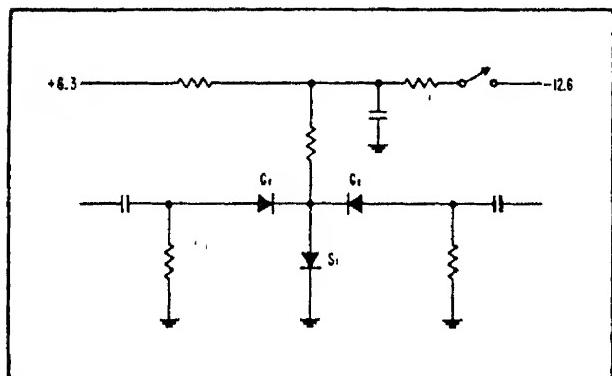


Figure 3-3. Diode Switch Schematic

3-21. When another digit in this particular column is selected, this switch must be turned off, and the one corresponding to the newly selected digit must be turned on. In order to turn this type of diode switch off, the -12.6 volts must be removed, and the common node of the diodes must be allowed to rise above the forward positive potential of the silicon diode. If the impedance presented by the programmer circuit in the OFF position is not an effective open circuit, there is no assurance that this potential will be reached. Consequently, in the OFF position, the programming circuit should present an impedance of at least 100 K ohms to the Synthesizer. Figure 3-4 shows a circuit which has been used successfully in remote programming. The switch mechanism is a transistor connected to the -12.6 volt line which is saturated in the ON condition and open in the OFF condition. This method meets the established criterion since the off transistor presents a virtual open circuit to the Synthesizer.

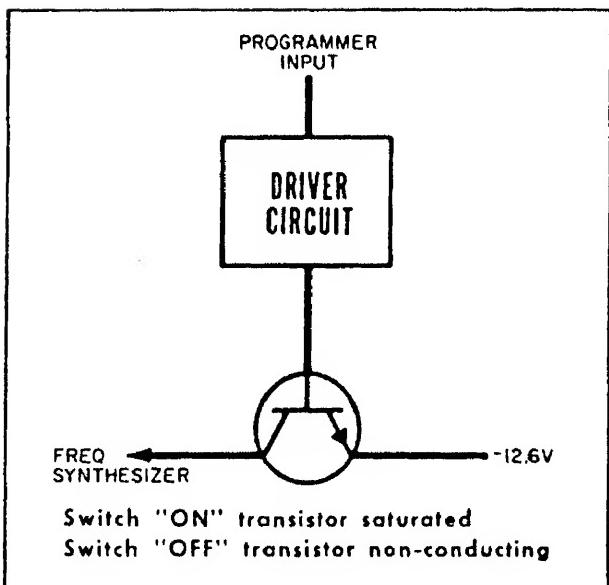


Figure 3-4. Remote Programming Driving Circuit

3-22. It is advisable to use diodes in the programming scheme as indicated in Figure 3-2 to avoid duplicate selection when the Synthesizer is being used in the LOCAL mode while remote programming circuitry is connected.

3-23. Current requirements for remote programming are shown in Table 3-2.

Table 3-2. Remote Current Requirements

| | |
|-------------------------------|-----------------|
| Column 10^7 | 16 ma |
| Column 10^6 | 14 ma |
| Columns 10^5 thru 10^{-2} | 8 ma per column |

3-24. Because internal circuits are susceptible to low frequency ripple on the power supply line (e.g., 60 cycles and 120 cycles), stringent requirements have been placed on the power supply. In order to ensure that ripple-induced spurious signals will be 90 db down it is necessary that low frequency ripple present on the supplies be less than 10 microvolts. When the internal supply is used externally for remote programming, the maximum allowable low frequency current that can be injected into the internal supply is 200 microamperes or, considering 10 columns are being programmed, 20 microamperes per column. This restriction does not hold if an external -12.6 volt supply is used. When this method is employed, the -12.6 volts may have up to 1 millivolt ripple.

3-25. A combination of local and remote programming may be accomplished with the LOCAL-REMOTE switch in the LOCAL position and with no pushbuttons depressed in the columns to be remotely programmed. While operating the Synthesizer in its LOCAL mode, the voltages appearing on the remote programming connectors may prove useful for remote indications.

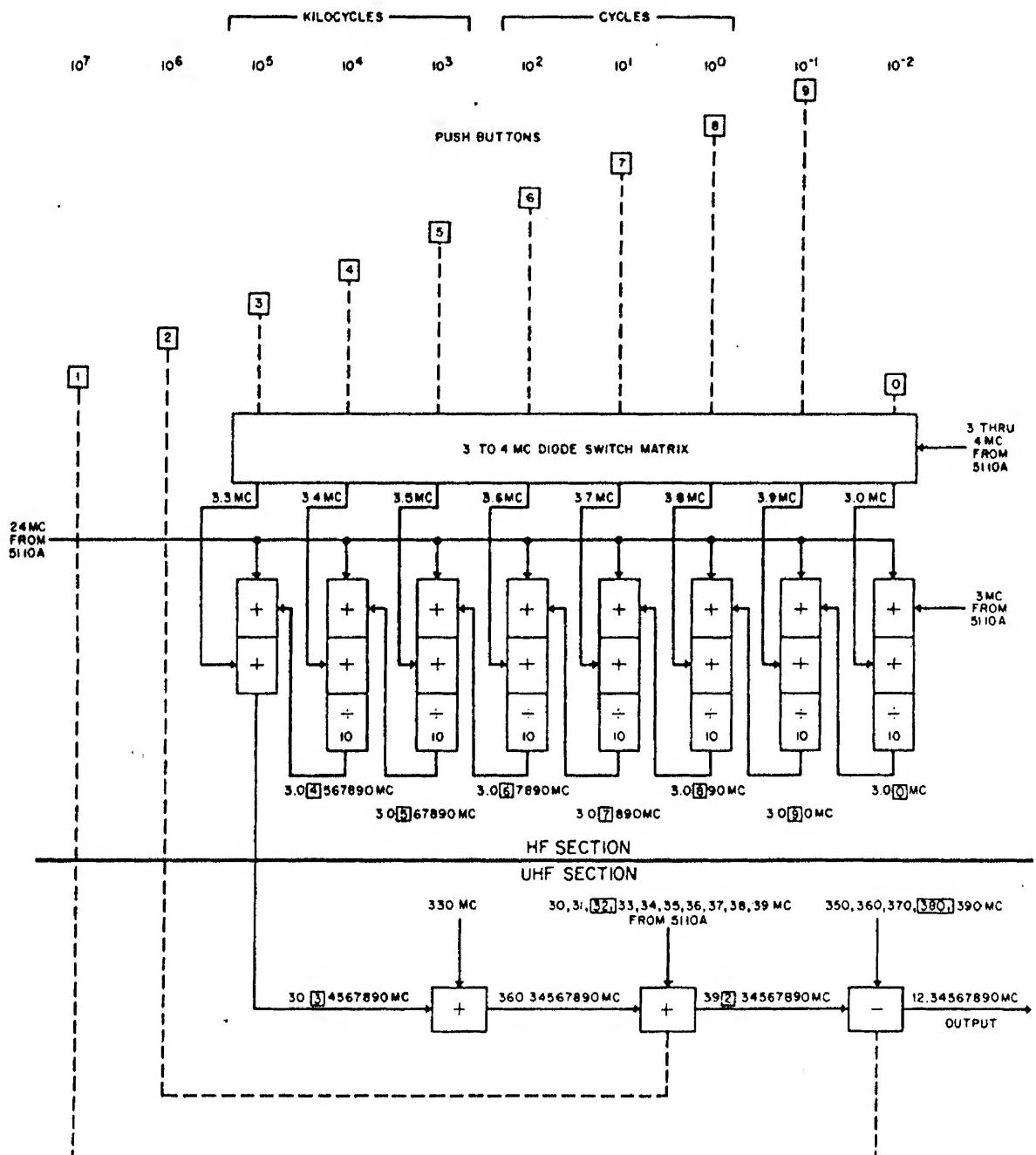


Figure 4-4. Synthesizer Block Diagram

4-6. Note that there are eight separate outputs from the switch assembly, each of which may be individually selected between 3.0 and 3.9 Mc. Seven outputs are connected to mixer/divider modules. The first seven modules (those controlled by the columns 10^{-2} through 10^4) are composed of two balanced mixers and one decade divider. The eighth module is similar to the first seven except that it lacks the divider. Here, again, the problems of noise and spurious responses arise. Spurious signals are generated by intermodulation products in the mixers, so the first thought is to reduce signal level. On the other hand, a relatively high signal level is required to maintain a respectable signal-to-noise level. The optimum compromise between spurious performance and signal-to-noise ratio is achieved in the HF section's modules.

4-7. The HF section of the 5100A produces a signal between 30 and 31 Mc having 8 synthesized digits. Figure 4-3 shows the basic module arrangement. An example explaining the operation of these modules, and by extension, the operation of the HF section in general, follows (Figure 4-4 applies directly to this example). The pushbuttons are shown for a selected frequency of 12,345,678.90 cps. The digit 0 is selected in the least significant column (10^{-2}). 24 Mc and 3 Mc from the 5100A are added in the first mixer of the selected module. The resultant 27-Mc signal is then added to a selected 3.0-Mc signal in the second mixer. Had we selected the digit 2 in the 10^2 column, 3.2 Mc would have been added to 27 Mc in the second mixer. In the original example, the addition of 27 Mc and 3.0 Mc signal results in 30.0 Mc. This synthesized signal is divided by 10 to give 3.00 Mc. (A great deal of filtering is carried on between successive operations in this module to minimize spurious signals). The resultant signal is now fed to the 2nd module and added to 24 Mc to obtain 27.00 Mc. If the pushbutton column controlling this second module (10^{-1}) is now set to digit 9 as shown, 3.9 Mc from the switch matrix is added to 27.00 Mc in the second mixer to get 30.90 Mc. This signal is now divided by 10 to 3.090 Mc. Figure 4-4 shows the digit 8 selected in the 10^0 column. The 3rd module first adds the synthesized 3.090 Mc from the output of the 2nd module to 24 Mc to get 27.090 Mc. 3.8 Mc is added to this to get 30.890 Mc. This is divided by 10 to get 3.0890 Mc.

4-8. The basic operation of the 5100A high frequency section now becomes clear; we successively add digits starting with the least significant and then divide by ten. When we have gone through the seven least significant columns (10^{-2} through 10^4), the result is a synthesized signal of 3.04567890 Mc. In the eighth module (10^5) this signal is again added to 24 Mc and the selected 3.3 Mc signal. However, since there is no divider in this module, it provides an output of 30.34567890 Mc. Each module receives 24 Mc from the 5110A. The least significant module always adds 3 Mc before its selected 3.0 through 3.9 Mc is added. All modules after the least significant one utilize the synthesized frequency of the previous module in place of the fixed 3-Mc signal. The output of the HF section of the 5100A will always be between 30 Mc and 31 Mc.

4-9. Each of the eight least significant columns has an "S" pushbutton. If this position is selected in any

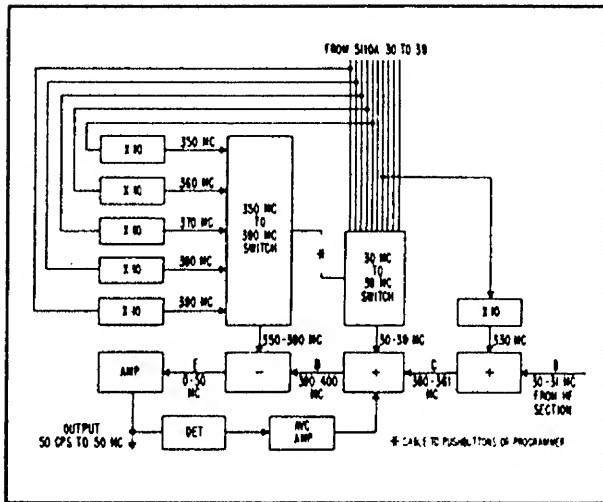


Figure 4-5. Model 5100A UHF Section

of these columns, a 3- to 4-Mc search oscillator is substituted for the 3.0 through 3.9-Mc signals from the 5110A to the selected module. This enables manual or continuous scanning of the selected digit position. For example, if an unknown signal is mixed with the Synthesizer output, the search oscillator may be used to obtain a pre-determined beat note. When this beat note is obtained for the most significant column, the correct digit pushbutton may be substituted for the search position in that column. The same procedure may then be followed for the next most significant column. Since the search oscillator is voltage controllable, it provides a sweep oscillator capability for the Synthesizer with extremely well-defined end points -- the digit buttons in the columns to the left and right of the searched column.

4-10. These basic blocks -- the diode switch matrix, the eight mixer modules, and the search oscillator -- comprise the high frequency section of the 5100A. They function to provide a selected frequency between 30 Mc and 31 Mc, having the stability of the internal standard, or a 1 Mc or 5 Mc external standard.

4-11. The 5100 UHF section adds the 1 megacycle and 10 megacycle steps. Now that a very accurate signal between 30 and 31 Mc is generated, the next step is to translate this accuracy to a signal between 0 and 50 Mc. This function is performed by the UHF section of the 5100A. Figure 4-5 shows the basic blocks involved in this operation. The 33-Mc signal generated by the 5110A is fed to a harmonic generator and multiplied by 10 to 330 Mc. This signal is mixed with the signal generated in the HF section to obtain a signal between 360 and 361 Mc. In the example, this would be 360.34567890 Mc at this point. This signal is filtered and then mixed with one of ten selected frequencies (30, 31, 32, ..., 39 Mc) to obtain a frequency in the range of 390 to 400 Mc. This 30- to 39-Mc switch employs much the same basic circuit and DC switching arrangement as that found in the 3- to 4-Mc matrix. The particular frequency selected in this operation is dependent on the particular digit chosen in the 10^5 column. In the example, 32 Mc would be chosen and would give 392.34567890 Mc. A

frequency has been generated which is selectable in 1-Mc steps and which still retains the original 0.01 cps resolution. To add the last or most significant digit, the 35, 36, 37, 38, and 39 Mc signals from the 5110A are individually multiplied by ten. The selected frequency which is determined by the digit selected in the 10⁷ column is then mixed with the synthesized signal. The resulting difference frequency is variable through 50 Mc and is the final synthesized frequency. In the example, the 380-Mc signal would be chosen. This, when subtracted from 392,345,678.90 cps, gives the final output of 12,345,678.90 cps. A few points are worth emphasizing. All the information leaving the HF section of the 5100A is contained in a band between 30 and 31 Mc, well within the capabilities of the filters used, which effectively remove spurious intermodulation responses which arise in mixing. The first two mixers in the UHF section are parametric. This gives a desirable low noise level.

4-12. The following paragraphs discuss the principles of operation of the individual assemblies and modules used in the Frequency Synthesizer in the order of their assembly or module identification.

4-13. PUSHBUTTON SWITCH A1.

(Schematic Diagram: Figure 5-13)

4-14. A positive 6.3 volts and a negative -12.6 volts is brought to this assembly from the Power Supply A25. The 6.3 volts is connected by P20 and P21 to J20 and J21 of the 3 to 4 Mc Diode Switch A3, and by P19 and P18 to J19 of the 30 to 39 Mc Diode Switch A19 and J18 of the 350 to 390 Mc Diode Switch A20. The -12.6 volts is connected to the proper diode switch or multiplier depending on which frequency is selected by the pushbuttons.

4-15. For example, if a frequency such as 37,000,000 Mc is selected, the individual pushbuttons perform the following functions:

- a. The "3" pushbutton connects -12.6 volts to multiplier A16, turning it on, and to the 350 to 390 Mc switch module A20, closing the 380 Mc Switch.
- b. The "7" pushbutton connects -12.6 volts to the 30 to 39 Mc Switch Module A19, closing the 37 Mc switch.
- c. The "S" pushbutton connects -12.6 volts to the 3 to 4 Mc Switch A3, closing the Search Oscillator switch.
- d. The "0" pushbuttons in the remaining columns connect -12.6 volts to the 3 to 4 Mc switch A3, closing the 3 Mc switches.

4-16. The pushbutton switch assembly provides 103 contact closures, one for each pushbutton on the front panel. Punching a pushbutton in any given column closes a contact and applies a -12.6 volts to the appropriate diode switch in the 3 to 4 Mc switch A3, 30 to 39 Mc switch A19, 350 to 390 Mc switch A20, to appropriate multiplier A13 through A17, and to connections on the remote control jacks J7, J8, and J9 on the rear panel.

4-17. SEARCH OSCILLATOR A2.

(Schematic Diagram: Figure 5-14)

4-18. The Search Oscillator is a Colpitts Oscillator (A1Q1, A1C1, A1C2, A1L1, A1CR5, and A1CR6) operating between 3 Mc and 4 Mc. The oscillator frequency is controlled by the voltage at the junction of varactors A1CR5 and A1CR6. The varactor response is not linear with voltage, so compensating network A1CR1-A1CR4. A1R1-A1R4 precedes the varactor junction to provide the proper control voltages. The control voltage is adjusted by front-panel SEARCH OSCILLATOR control A2R1 when S4 is set to LOCAL, and by an externally supplied -1 to -11 volts at J11 when S4 is set to REMOTE.

4-19. Isolation between the Oscillator A1Q1 and amplifier A1Q2 is increased by A1R9, which also flattens the amplifier frequency response. Voltage divider A2R2, A2R3, and A1R16 provides back-biasing to A1CR6. The effects of temperature changes on the varactors are compensated by A2CR1. Current through A2CR1 is limited by A2R1. The Search Oscillator output amplitude is adjusted by A2R4. The output signal is filtered by low-pass filter A2L1, A2L4, A2L2, A2C3, A2C4, and A2C5; the filter has a high frequency limit of 4 Mc. Ac grounds for A1Q1 base and A1CR6 cathode are provided by A1C8 and A1C3 respectively. Filtering of the -12.6 and +6.3-volt supplies is provided by L1, C2, C3, L2, C4, C1 and L3.

4-20. 3 TO 4 MC SWITCH A3.

(Schematic Diagram: Figure 5-15)

4-21. The 3 to 4 Mc Switch Module has within it 11 switch board assemblies, each of which has eight diode switches. The signals (3.0 through 3.9 Mc) from the filter dividers and the output of the Search Oscillator (3.0 to 4.0 Mc) are brought to separate inputs on the 3 to 4 Mc Switch Module.

4-22. The output from the Search Oscillator is brought to A3J9. A3J9 is connected to emitter follower A3A1Q1 which serves as a buffer between 10⁵ and 10⁴ diode switches and the remaining diode switches. The diode switch CR1, CR2, CR3, and CR4 is controlled by the "S" button in the 10⁵ column. If the "S" button in this column is not pushed, +6.3 volts back-biases CR1, CR2, and CR3 and permits no signal flow through CR1, CR2, and CR3. Any small signal that might appear at the junction of CR2 and CR3 is routed through CR4 to ground. When the "S" button is pushed in this column, -12.6 volts is applied at R2 and R4. This voltage forward-biases CR1, CR2, CR3 and back-biases CR4. Thus any signal at C1 passes through CR1, CR2, and CR3 to J1. Operation of the other diode switches is identical.

4-23. CONNECTOR BLOCK A4.

(Schematic Diagram, Figure-16)

4-24. The Connector Block is the source of power and signals for Mixer/Dividers A5 through A11 and Mixer/Filter A12. 24 Mc and 3 Mc signals from the 5110A are brought to the Connector Block and are connected to the Mixer/Dividers and Mixer/Filter.

4-25. The 3 Mc signal from the 5110A is amplified by A4A1Q1 and A4A1Q2 and connected to Meter M1 for front panel monitoring. Part of the 3 Mc signal is tapped off between A4A1R1 and A4A1R2 and connected to input of Mixer/Divider A5. The 24 Mc signal is supplied to Mixer/Filter A12 and through A4A4Q1 to Mixer/Filter A5 through A10.

4-26. MIXER/DIVIDERS A5 THROUGH A11.

(Schematic Diagram, Figure 5-17)

4-27. A 24 Mc signal is connected to pin 6 of P1 and amplified by Q1 and Q2. A 3.0 to 3.1 Mc signal is connected to pin 2 of P1, goes through low pass filter L36, C48, L37, and C49 and then to T1. The 24 Mc and 3.0 to 3.1 Mc signals are mixed in a balanced mixer network, T1, CR1, CR2, C16, and C17. The resultant 27 to 27.1 Mc signal goes through a band pass filter, C18, C19, L12, C20, L13, C21, and C22, and is amplified by Q3. 3 to 4 Mc from the 3 to 4 Mc Diode Switch or from the Search Oscillator is connected to pin 1 of P1 which is connected to Q6. Emitter follower Q6 provides a high impedance input for this signal. This signal then passes through low pass filter L20, C34, L21, and C35, and on to T2. The 27 to 27.1 Mc and the 3 to 4 Mc signals are mixed in balanced mixer T2, C36, CR3, CR4, and C37. The resultant 30 to 31 Mc signal is connected to divider A2.

4-28. The signal then goes through bandpass filter C61, C62, L61, C63, R51, L62, C64, and C65, and is amplified by Q51. The 30 to 31 Mc signal passes through a band-pass filter and is amplified by Q52 and Q53. CR51 selects only the negative peaks of the signal and presents them to the base of Q54 and L68. L68 is tuned to provide the proper amount of current leak-off so that Q54 will function as a stored-charge divide-by-two amplifier. R65 and C79 is a self-biasing circuit which makes Q54 operate in the range of L68.

4-29. Divider action begins when the first negative half-cycle of sine-wave appears at the cathode of CR51 causing that diode to conduct. Current flows through T52 secondary, CR51, R62, Q54 base-emitter junction, C79 and R65, turning on the transistor, causing minority carrier storage in the base-emitter junction, and charging C79 to provide a bias voltage for Q54 emitter. Current through L68 increases exponentially from zero until the diode shuts off at the end of the negative half-cycle, when the input signal goes positive.

4-30. When the input signal goes positive, diode CR51 shuts off. Current through the coil decreases exponentially, drawing off the minority carriers (charges) stored in Q54 base-emitter junction. The time constants of the divider circuit are such that the charges in the base-emitter junction are not exhausted and the transistor remains turned on, so no change is made in the collector circuit or voltage.

4-31. During the second negative half-cycle, more of the input signal current is required to sustain the current through L68, since L68 current now increases exponentially from a value greater than zero. Because Q54 emitter is already negatively biased due to the charge on C79, and current required for the coil is increased, fewer charges are stored in the Q54 base-

emitter junction as a result of the second negative half-cycle.

4-32. When the input signal again goes positive, diode CR51 shuts-off. Current through L68 decreases exponentially, drawing off the charges in the transistor base-emitter junction. This time the coil current is greater than it was during the first positive half-cycle of input signal, while the amount of charge in the transistor base-emitter junction is less, so the coil conducts until the supply of charges is exhausted. This takes less than one half-cycle of the input signal. Since there are no charges in the base-emitter junction, the transistor shuts off. The charge on C79 leaks off through R65.

4-33. The third negative half-cycle of input signal sees the same conditions as the first half-cycle. There is no coil current, and the transistor is not conducting. Thus the transistor is turned on and off once (15.0 to 15.5 Mc) for each two cycles of the input signal (30.0 to 31.0 Mc).

4-34. The output of the stored-charge divider drives a regenerative divide-by-five divider consisting of Q55 acting as class C amplifier driving a tank circuit tuned to the desired output frequency (3.0 to 3.1 Mc). The transistor is initially not conducting and is turned on by a negative-going signal from the stored-charge divider, starting oscillations in the tank circuit. The signal from the tank circuit is fed to a low pass filter C84, L71, C85, L72, and C86 to the output at pin 3 of P1.

4-35. A portion of the signal in the tank circuit of Q55 is fed to Q55 emitter from the voltage divider C80 and C81. The non-linear characteristic of the transistor-base-emitter junction causes the fourth harmonic of the output frequency to be generated there and mixed with the input signal from the stored-charge divider to produce the desired output signal (3.0 to 3.1 Mc) at Q55 collector.

4-36. Diodes CR54, CR55, and CR56 in series between Q55 emitter and ground prevent the transistor base-emitter junction from breaking down and causing noise when the transistor is reverse-biased. The diodes conduct first, and once conducting, the voltage across the base-emitter junction will never be sufficient to cause it to break down. Diodes CR52 and CR53 provide clamping to limit the regenerative divider output signal to voltages between ground and +6.3 volts.

4-37. MIXER/FILTER A12.

(Schematic Diagram: Figure 5-18)

4-38. Mixer A12A1 operation is identical to that described in Paragraph 4-27. Filter A12A2 operation is similar to that described in Paragraph 4-28, except that the 30 to 31 Mc signal is not divided by ten.

4-39. 39 TO 390 MC MULTIPLIER A13.

(Schematic Diagram: Figure 5-19)

4-40. The function of Multiplier A13 is to multiply the 39 Mc signal to 390 Mc. 39 Mc from the 5110A

is connected to A13J1 where it sees an impedance of approximately 100 ohms. The signal is amplified by Q1 and appears on the collector of Q1 and sees a hi-Q circuit A1C5 and A1L2. This circuit removes any undesirable 1 Mc sidebands. A1C6 and A1R6 look like a transformer and couple the signal to A1Q2 where it is again amplified and appears across tuned transformer A1T1. The signal on the secondary is connected to frequency doubler A1CR1-CR4. Note the dc path from the junction of A1CR1-CR2 through A1R11 to A1Q5. The path continues through A1Q5 to ground if the "0" pushbutton in the most significant column is pushed applying -12.6 volts to its base turning it on. If the "0" pushbutton is not pushed there is no output from this module. Assuming the pushbutton is pushed a 78-Mc signal appears at the junction of A1CR3-CR4. The signal sees a tuned transformer of about 500 ohms and is coupled through A1C20 to grounded base amplifier A1Q3. A1C21 cancels out reactance of A1Q3. The signal on the collector of A1Q3 sees what looks like a transformer, A1C22 and A1R16. A1L8 tunes out reactance of A1C22. A1R14 suppresses oscillations of A1CR5. A1R15 controls the gain of A1Q3. A1C24-25 are tuned for maximum 390 Mc output. A1R17, Q4, and CR6 are a degenerative feedback loop which stabilizes the output. A1CR5 is a step-recovery diode used as a harmonic generator. The fifth harmonic from A1CR5 is the desired output from the multiplier.

4-41. MULTIPLIERS A14-A17.

(Schematic Diagrams: Figures 5-20 thru 5-23).

4-42. The operation of these multipliers is similar to that of A13 except that these multipliers have no power supplied to them unless the "1", "2", "3" or "4" button in the most significant column (column of pushbuttons farthest left) is pushed. For example, pushing the "1" button applies -12.6 volts to the base of A14A1Q5, turning it on. When A14A1Q5 turns on its collector goes positive turning on A14A1Q6 which now allows the -12.6 volts at its emitter to be conducted to the rest of the multiplier circuits, activating them.

4-43. 33 TO 330 MC MULTIPLIER A18.

(Schematic Diagram: Figure 5-24).

4-44. The operation of this multiplier is similar to the others except that the circuits in this module are always on.

4-45. 30 TO 39 MC SWITCH A19.

(Schematic Diagram: Figure 5-25)

4-46. The operation of this diode switch is similar to that described in Paragraph 4-22. Note CR4 and CR5 which provide additional isolation between "on" and "off" conditions of the switch. This module is the source of all input frequencies for the multipliers. A11Q1 serves as an impedance transformer and part of its gain as an amplifier offsets the insertion loss in the diode switches.

4-47. 350 TO 390 MC SWITCH A20.

(Schematic Diagram: Figure 5-25)

4-48. The operation of this diode switch is similar to that of the other diode switches. The frequencies

present at the input are not permitted to pass through unless the appropriate front panel pushbutton is pushed.

4-49. 1ST UHF MIXER A21.

(Schematic Diagram: Figure 5-26)

4-50. The function of the 1st UHF Mixer is to take the 330 Mc and 30 to 31 Mc signals, mix them, select a resultant signal which lies between 360 and 361 Mc, amplify it and apply it to Filter FL7.

4-51. 330 Mc from Multiplier A18 is connected to J2 and from here to primary of T1. C1 tunes T1's secondary for maximum transfer of 330 Mc signal. The synthesized 30 to 31 Mc signal from Mixer/Filter A12 is connected to J1. The signal is fed to a filter consisting of a series resonant circuit followed by a pi network. C2 and C7 are adjusted to give equal response to band endpoints 30 and 31 Mc. R3 adjusts the bias on mixer diode CR2. The 330 Mc signal on the secondary of T1 and the synthesized 30 to 31 Mc signal are heterodyned in CR1 and CR2 and the resultant products are coupled to the primary of T2. C4 tunes the primary to select a 360 to 361 Mc signal which is coupled to common base amplifier Q1. C6 is tuned for maximum and also for equal amplitude at band edges. T3 is an impedance matching transformer.

4-52. 2ND UHF MIXER A22.

(Schematic Diagram: Figure 5-27)

4-53. The 2nd UHF Mixer operates in a manner similar to the 1st UHF Mixer with the following differences. Due to the broader band of frequencies that must be handled in the 2nd UHF Mixer, more amplification is necessary to provide the proper level of output signal. Amplifier A1Q1 provides initial amplification of the selected 30 to 39 Mc signal. L3 and L5 are adjusted to provide equal response at the filter band limits, 30 and 39 Mcs. Following the heterodyning of the 360 to 361 Mc and the 30 to 39 Mc signals in CR1 and CR2 are amplifiers A2Q1 and A2Q2. C4, C6, and C9 are tuned to provide equal response over the 390 to 400 Mc band.

4-54. Also connected to the input of amplifier A2Q2 is an automatic gain control line from the output amplifier A24. If the signal in the output amplifier increases, the action is such that the current to amplifier A2Q2 decreases, thereby lowering the gain of A2Q2.

4-55. 3RD UHF MIXER A23.

(Schematic Diagram: Figure 5-28)

4-56. Final mixing in the Synthesizer occurs in the 3rd UHF Mixer. Both input signals have been synthesized and are mixed in CR1 and CR2. R1, R2, and R3 form a 3 db pad for the 390 to 400 Mc signal. R4, R5, and R6 form a 2 db pad for the 350 to 390 Mc signal. DL1 is a 180° phase line. The frequencies lying between 0 and 50 Mc from CR1 and CR2 see an easy path through the lo-pass filter and on to J3. The other frequencies are either bypassed to ground or rejected by inductances.

4-57. OUTPUT AMPLIFIER A24.

(Schematic Diagram: Figure 5-29)

4-58. The function of the output amplifier is to take its input frequency (0 to 50 Mc) and to supply this signal at the specified levels over the entire frequency range. If the signal is below 50 cps, it does not get through the video amplifier. It is tapped off between R2 and R3 and supplied as a low level signal at the rear panel of the 5100A. Above 50 cps the signal goes through the video amplifier which consists of Q1 through Q6 and associated circuits. R7 is a low frequency gain adjust and L1 is a high frequency gain adjust. A portion of the signal at the emitter of Q6 is detected and supplied to a front panel meter as an indication that a synthesized signal is available at the output jack of the 5100A. The signal at the emitter of Q6 is kept at a constant level. At frequencies above 100 kc this is done with an automatic gain control circuit. This circuit operates as follows:

4-59. Q7 is part of an AND circuit which is used as a switch to turn the AGC circuits on and off. Below 100 Kc Q7 is turned off. This is the condition when the "0" buttons in the three most significant columns are pressed. When these three buttons are pressed, the base current which is supplied to Q7 for frequencies above 100 kc is allowed to leak off through CR3, CR4, and CR5. This turns Q7 off and its collector circuit goes to about 6 volts positive. This positive potential turns on CR7 and pulls the emitters of Q8 and Q9 more positive than their base levels, turning them off. When Q8 and Q9 turn off Q10 and Q11 turn off and no current flows from Q11 to amplifier A2Q2 in Mixer A22. However, the positive potential on Q7 also turns on CR9 allowing current to flow to amplifier A2Q2 in Mixer A22. R61 is adjusted to supply proper current to A2Q2 in Mixer A22.

4-60. For frequencies above 100 kc Q7 is on and the AGC circuits are allowed to assume their operating states. The signal is sampled at the emitter of Q6 and brought to differential amplifier Q8-Q9 through detectors CR6 and CR8. If the signal at the emitter of Q6 increases, the positive swing is coupled through CR6 to Q8, turning it on. The resulting negative swing of Q8's collector is connected to the base of Q10, turning it on. The negative swing at the emitter of Q6 is coupled through CR8 to Q9, turning it off. The resulting positive swing at Q9's collector is connected to the base of Q11 cutting down the flow of current through Q11 and thus also reducing current to A2Q2 in A22. The result is a decrease in gain. If the signal at the emitter of Q6 decreases, the action of the AGC circuits is such as to increase the gain of A2Q2 in A22.

4-61. POWER SUPPLY MODULE A25.

(Schematic Diagram: Figure 5-30)

4-62. RECTIFIER BOARD ASSEMBLY A25A1.

4-63. Rectifier Board A25A1 contains 3 full-wave bridge rectifier circuits and a network of voltage reference diodes which function as a pre-regulation network.

4-64. The three secondary windings of Power Transformer T1 are connected to full-wave bridge rectifier circuits on A25A1. The Power Supply circuit operating from terminals 5 and 6 of the Power Transformer provides reference voltages for the positive voltage and negative voltage outputs of A25A1, and bias voltages for the +6.3-volt and -12.6-volt regulators on A25A2. The reference voltage for the positive voltage supply is established by A1CR15, for the negative voltage supply by A1CR16; bias voltage for the +6.3-volt supply regulator is established by A1CR17, A1CR18, and A1CR19, for the -12.6-volt regulator by A1CR20, A1CR21, and A1CR22. Breakdown diodes A1CR13 and A1CR14 maintain voltages of A1Q1 collector and base with respect to ground for proper operation of the other diode reference circuits.

4-65. Transistors Q1 and Q2 are a Darlington configuration series voltage regulator for the positive voltage supply. They obtain their reference voltages from the supply described above.

4-66. REGULATOR BOARD ASSEMBLY A25A2.

4-67. The series regulator of the +6.3-volt supply operates on the output of the positive voltage supply already described. A reference voltage for the differential amplifier A2Q7A/B is established by A2CR1. A2R12 is the +6.3-volt adjustment control. The difference in voltages between A2Q7A and A2Q7B bases establishes a voltage level at A2Q4 base. The A2Q4 base-emitter voltage controls collector current through A2R5 and A2R7, to the reference voltage supply on A25A1, establishing the voltage at the base of A2Q3, which controls regulator transistor Q5 in the Darlington configuration +6.3-volt regulator. Transistor A2Q1 is the current limiting transistor for the +6.3-volt supply; its conduction is proportional to the voltage across R1 and the voltage is determined by the current through R1. As voltage across R1 increases, it increases the forward bias across A2Q1 base-emitter junction, increasing current through A2Q1, protecting Q5.

4-68. Operation of the -12.6 volt supply is similar to that of the +6.3-volt supply described above.

SECTION V

MAINTENANCE

5-1. INTRODUCTION.

5-2. This section provides maintenance and service information for the Model 5100A Frequency Synthesizer. Included are tables of recommended test equipment, an in-cabinet performance check which may be used to verify proper operation of the 5100A, troubleshooting aids, adjustment procedures, and schematic and block diagrams.

5-3. TEST EQUIPMENT.

5-4. Recommended test equipment for performance checking and troubleshooting is listed in Table 5-1. Other test instruments may be used if their specifications equal or exceed the required characteristics. The recommended measuring systems must be composed of a number of standard and special instruments connected together. Therefore the performance of the measurement system is being checked as well as the performance of the Frequency Synthesizer. The following measurement systems will require a considerable amount of effort to duplicate and also to verify that an "out of specification" reading is traceable to the instrument under test or to the test equipment.

5-5. CIRCUIT CHECK SWITCH.

5-6. A check of general operation is made by noting the circuit check meter indication as the switch is rotated through its four positions. All readings should be in the green area.

5-7. 5110A. The meter signal originates in the 5110A. The signal is amplified on Meter Board Assembly A4A1 and the meter monitors its output. If the meter reading is in the green section it is an indication that the signal from the 5110A is present and has the proper amplitude.

5-8. 6.3 VDC AND 12.6 VDC. A reading in the green section in these positions indicates that the power supply of the 5100A is operating properly.

5-9. OUTPUT. The meter signal is supplied from the OUTPUT AMPLIFIER Module A24. A reading in the green section is an indication that a synthesized signal is present at the OUTPUT jack.

5-10. IN-CABINET PERFORMANCE CHECK.

5-11. GENERAL. The In-Cabinet Performance Checks, Table 5-2, and Performance Check Test Card (to be filled out during incoming inspection) page 5-24a verify specifications and provide a permanent record of performance of each instrument. The In-Cabinet Performance Check verifies proper operation of all circuits in Model 5100A Frequency Synthesizer and may be used:

- a. As part of an incoming inspection check of instrument specifications;
- b. periodically, for instruments used in systems where maximum reliability is of utmost importance;
- c. as part of a troubleshooting procedure to locate malfunctioning circuits, and
- d. after any repairs or adjustments, before returning instrument to regular service.

5-12. MODULE DESIGNATIONS.

5-13. Table 5-4 gives the reference designations and names of all modules used in the Synthesizer.

5-14. INSTRUMENT COVER REMOVAL.

5-15. For access to modules in the Synthesizer, remove top and bottom instrument covers. Remove the four screws from the cover and slide cover toward rear of instrument.

5-16. SWING-OUT DECK.

5-17. Modules A13 through A24 are mounted on a swing-out deck. For access to these modules, remove three screws indicated by arrows silkscreened on rear panel, loosen two fasteners on deck, and swing out deck.

5-18. TEST CABLE.

5-19. A test cable (Part No. 05100-6180) can be used to substitute for a defective Mixer Divider Module (A5 through A11). If A5 is defective, remove module and connect Pin 2 of A4J5 to Pin 3 of A4J5 with test cable. Unit will now operate with resolution of .1 cps (right hand column of pushbuttons ineffective). If the defective mixer divider is one other than A5, remove the defective module, replace it with A5, and install Decade Test cable as explained above.

5-20. TROUBLESHOOTING.

5-21. The best approach to isolating trouble in the Model 5100A is first to obtain all possible information from the controls, indicators, and connectors, then logically apply this information to locate the defective unit or module. Figures 3-1 (Front Panel), 2-2 (Rear Panel), 5-7, 5-8, (Component Location), 5-11, 5-12, (Overall Block Diagrams) can be used to help understand operation and locate modules and parts. To further aid in analysis, each position of the CIRCUIT CHECK switch is discussed in Paragraphs 5-5 through 5-9. Table 5-3 (Troubleshooting Aids) lists basic trouble indications and checks for their cause. The In-Cabinet Performance Check, Table 5-2, is a good troubleshooting aid.

Table 5-1. Test Equipment Required

| Instrument Type | Characteristics | Use* | Instrument Recommended |
|---------------------------------|---|--|--|
| Frequency Synthesizer | Precision signal source .01 cps to 50 Mc (certified spurious down 100 db) | 1 | § 5100A/5110A |
| High Frequency Signal Generator | 100 kc to 10 Mc, 606A Specifications | 2, 3 | § 606A |
| Oscilloscope | Display 500 Mc signal | 2, 3 | § 185B |
| Electronic Counter | Measure frequency to 40 Mc \pm 1 count | 1 | § 5245L |
| Sweep Signal Generator | 10 - 500 Mc | 2 | Jerrold 900B |
| Differential Voltmeter | 0 to 100 vdc .01% accuracy | 2, 3 | § 740A |
| Wave Analyzer | Frequency to 1.5 Mc | 1 | § 310A |
| Synthesizer Driver | Provides stable 1 Mc signal | 1 | § 5110A |
| RF Millivoltmeter | 1 mv to 500 mv to 50 Mc, 3% accuracy | 1, 2, 3 | § 411A with § 11025A Probe & § 11024A Type N "Tee" Probe Tip |
| Balanced Mixer | Frequency to 50 Mc, N. F. < 7 db | 1 | § 10514A |
| Frequency Doubler | Frequency to 50 Mc | 3 | § 10515A |
| DC Null Voltmeter | Dc null detection \pm 2% | 1, 2 | § 413A |
| Frequency Standard | 1 Mc sine wave | 1 | § 106A/B |
| DC Voltmeter | 10 megohm input Z, 1% accuracy | 3 | § 412A |
| Low Noise Amplifier | 40 db ampl. N. F. < 1 db | 1 | |
| AC Voltmeter | 1 cps to 1 Mc \pm 3% | 1 | § 403A with 500 μ f across meter |
| Variable Delay Line | Delay signal over frequency range | 1 | |
| Strip Chart Recorder | 0.2% accuracy, full scale | 1 | Moseley 680 |
| Tuned Voltmeter | 1000 cps bandwidth, 13 to 130 cps | 1 | § 415D |
| Transistor Power Supply | 0 to 40 volts dc | 2, 3 | § 723B |
| Variable ac Voltage Supply | 0 to 300 Vac | 2, 3 | |
| Attenuator | 0 to 100 db in 10 db steps, coaxial | 2, 3 | § 355D |
| Attenuator | 0 to 12 db in 1 db steps | 2, 3 | § 344C |
| Feed-thru Termination | 50-ohm feed-thru | 2, 3 | § 11048B |
| Termination | 50-ohm BNC | 2, 3 | § 1250-0207 |
| Termination | 50-ohm coaxial | 2, 3 | § 908A |
| Connector | BNC Tee (4 required) | 2, 3 | § 1250-0072 |
| RMS Voltmeter | Range to 3V, accuracy \pm 2% | 1 | § 3400A |
| Coaxicon Tool | | For removing connectors in Connector Block A4 05100-6004 | Amphenol #305183-8 20 Type IV |
| Adaptor | BNC to N | 2, 3 | |

*1, Performance Check; 2, Circuit adjustment; 3, Troubleshooting.

Table 5-2. In-Cabinet Performance Check

1. OUTPUT FREQUENCY:

Connect Synthesizer front-panel OUTPUT to Counter input. Set Counter to measure FREQUENCY, 1 sec TIME BASE (gate time). Set Counter controls for operation from external frequency standard, use 1 Mc from FREQUENCY STANDARD output of Model 5102A under test as time base for Counter.

Using front-panel pushbuttons of the Model 5100A, select output frequencies of 11, 111, 111.11; 22, 222, 222.22; 33, 333, 333.33; 44, 444, 444.44; 15, 555, 555.55; 16, 666, 666.66; 17, 777, 777.77; 18, 888, 888.88; 19, 999, 999.99; 10, 000, 000.00; and 1, 000, 000.00 cps. The Counter display should be the same as the frequency selected on the Model 5100A, ± 1 cps. Although the Counter does not display the frequency selected in the tenth- and hundredth-of-a-cycle-per-seconds columns, an output as indicated above is a legitimate check for these columns. If no signal were present in one of these columns, the output frequency would be zero cps. Note: This is not an accuracy check. If the above frequencies can be selected, any frequency within the range of the Synthesizer can be created.

2. DIGITAL FREQUENCY SELECTION:

Connect Model 5100A LO LEVEL output to DC Amplifier with 20 db gain and connect to Counter. Set Counter FUNCTION control to 1 Period Average, TIME BASE (gate time) to 1 msec. Using the Model 5100A front-panel pushbuttons, select the following frequencies and note the period on the Counter

| FREQUENCY (cps) | PERIOD (sec) |
|-----------------|-----------------------------|
| 000,000,000.0 | counter counts continuously |
| 000,000,000.1 | 10,000 |
| 000,000,000.2 | 5,000 |
| 000,000,000.3 | 3,333 |
| 000,000,000.4 | 2,500 |
| 000,000,000.5 | 2,000 |
| 000,000,000.6 | 1,666 |
| 000,000,000.7 | 1,429 |
| 000,000,000.8 | 1,250 |
| 000,000,000.9 | 1,111 |
| 000,000,001.0 | 1,000 |
| 000,000,002.0 | 500 |
| 000,000,003.0 | 333 |
| 000,000,004.0 | 250 |
| 000,000,005.0 | 200 |
| 000,000,006.0 | 166 |
| 000,000,007.0 | 143 |
| 000,000,008.0 | 125 |
| 000,000,009.0 | 111 |

Change Counter FUNCTION control to FREQUENCY, TIME BASE (gate time) to 1 sec and connect to OUTPUT jack. Press the 0 pushbuttons in the right two columns of the Model 5100A. The Counter should indicate directly any other frequency selected by the remaining 8 columns on the Synthesizer front panel.

Repeat the above procedure, using appropriate programming of the rear panel connections of J7, J8, and J9.

SWITCHING TIME:

Set Model 5100A FREQUENCY SELECT switch to Local and select desired output frequency on push-buttons, except do not push any buttons in the column(s) to be switched electrically. Switching time test requires two signals alternately turning on two frequencies. Be sure the difference between the two frequencies is sufficient to be observable on the Oscilloscope. An "on" signal is -12.6 volts applied between the programmed connection and ground. An "off" signal is a voltage between 0 and +2 volts applied between the programmed connection and ground; the positive voltage ensures that the switch is turned off. Pulse width of the switching signals should be at least 20 μ sec, rise time and decay time of the switching signals should be less than 1 usec.

Connect one of the switching signals to one vertical amplifier input of a dual trace Oscilloscope. Connect the Model 5100A OUTPUT signal to the other vertical amplifier input. Synchronize the Oscilloscope sweep with the (trigger or sync) output of the pulse generator. Set the Oscilloscope sweep speed to 10 μ sec/cm; for accurate measurement of switching time, there should be a delay

Table 5-2. In-Cabinet Performance Check (cont'd)

SWITCHING TIME (cont'd):

between start of sweep and time when switching signal appears on screen. The pattern on the Oscilloscope will show the switching between the two frequencies programmed and one of the switching signals (the other switching signal will be complementary). Switching time is measured from the time the switching signal turns "on" to the time when the signal it controls is stabilized at its peak value.

3. OUTPUT VOLTAGE:

Monitor output frequencies with Counter.

0 to 50 cps Connect AC Voltmeter to Model 5100A LO LEVEL OUTPUT connector. Select output frequency of 00,000,000.00. Slowly turn the SEARCH OSCILLATOR dial from 0 to 5, observing Voltmeter indication. The decrease in voltage near 0 is due to frequency response characteristics of Voltmeter.

50 cps to 100 Kc Connect AC Voltmeter to Synthesizer front-panel OUTPUT jack. Terminate the Synthesizer output in a 50-ohm resistive load. Using appropriate pushbuttons, vary output frequency with SEARCH OSCILLATOR dial. Observe that the voltage is 1 volt rms, + 2 db, -4 db, from 50 cps to 100 Kc.

100 Kc to 10 Mc Terminate OUTPUT connector with 50 ohms and connect $\frac{1}{2}$ 3400A RMS Voltmeter to OUTPUT connector. Observe that the output voltage is 1 volt rms ± 1 db from 100 Kc to 10 Mc.

10 Mc to 50 Mc Terminate OUTPUT connector with 50 ohms and connect $\frac{1}{2}$ 411A RF Millivoltmeter to OUTPUT connector. Observe that the output voltage is 1 volt rms ± 1 db from 10 Mc to 50 Mc.

4. SEARCH OSCILLATOR :

Use same setup and procedure as for Item 2, except select frequency in desired column by pressing "S" pushbutton in that column and using SEARCH OSCILLATOR dial on front panel (set SEARCH toggle switch to Local).

Switch SEARCH toggle switch to REMOTE and repeat above procedure, controlling SEARCH OSCILLATOR with a bias voltage varying between -1 and -11 volts applied at the rear panel SEARCH (-1 to -11v) jack.

5. SIGNAL-TO-PHASE NOISE RATIO :

Make the measurements using setup shown in Figure 5-1 and the following general procedure:

1. Connect equipment as shown except for the phase control to the reference unit.
2. Connect the same frequency f_0 , from the reference unit to the mixer, as the frequency to be measured. Frequency should be above 200 kc.
3. Calibrate system by off-setting frequency of 5100A under test by 1 kc. Set attenuator to 50 db.
4. Adjust voltmeter range switch for an on-scale reading. Note the range setting and the meter reading in db. This is the reference signal level.
5. Set the 5100A to the same frequency as the reference unit. Set attenuator to 10 db. A minimum of 10 db must remain between the 5100A and the mixer for linear operation. Vary the delay for minimum dc output on the Phase Meter, which indicates the desired condition of phase quadrature.

Table 5-2. In-Cabinet Performance Check (cont'd)

5. SIGNAL-TO-PHASE NOISE RATIO (cont'd):

6. Connect the phase control lead to the reference unit. This insures phase lock during the measurement.
7. Adjust the AC Voltmeter for an on-scale reading. Note this reading in db and add one db for correction of the average reading meter to rms. The difference in this sum and the reference reading, obtained in Step 5, is the signal-to-noise ratio. It is in a 0.5 cps to 15 kc bandwidth. Since a demodulated bandwidth is equal to half the RF spectrum bandwidth, the measurement is of a 30 kc bandwidth centered on the signal, excluding a one cps band centered on the signal. Subtract 3 db, assuming equal noise from both generators.

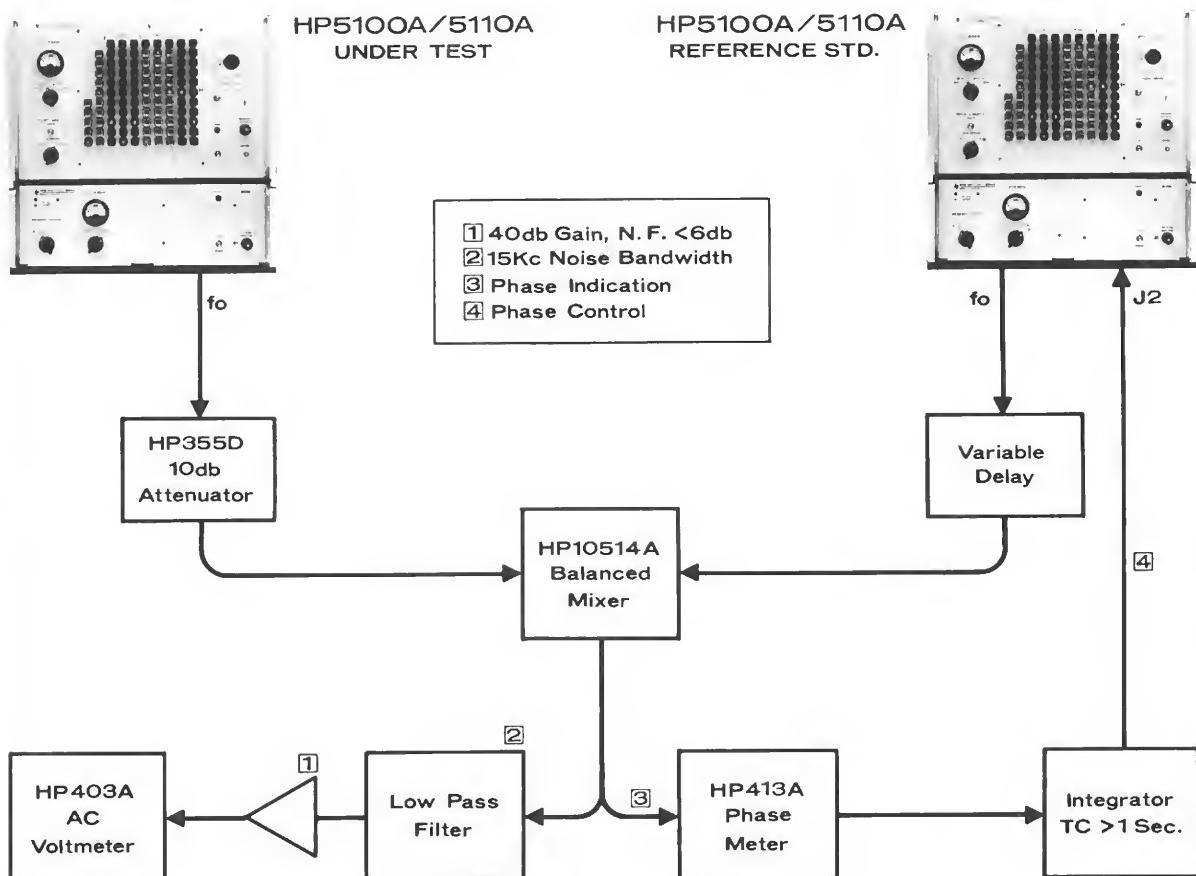
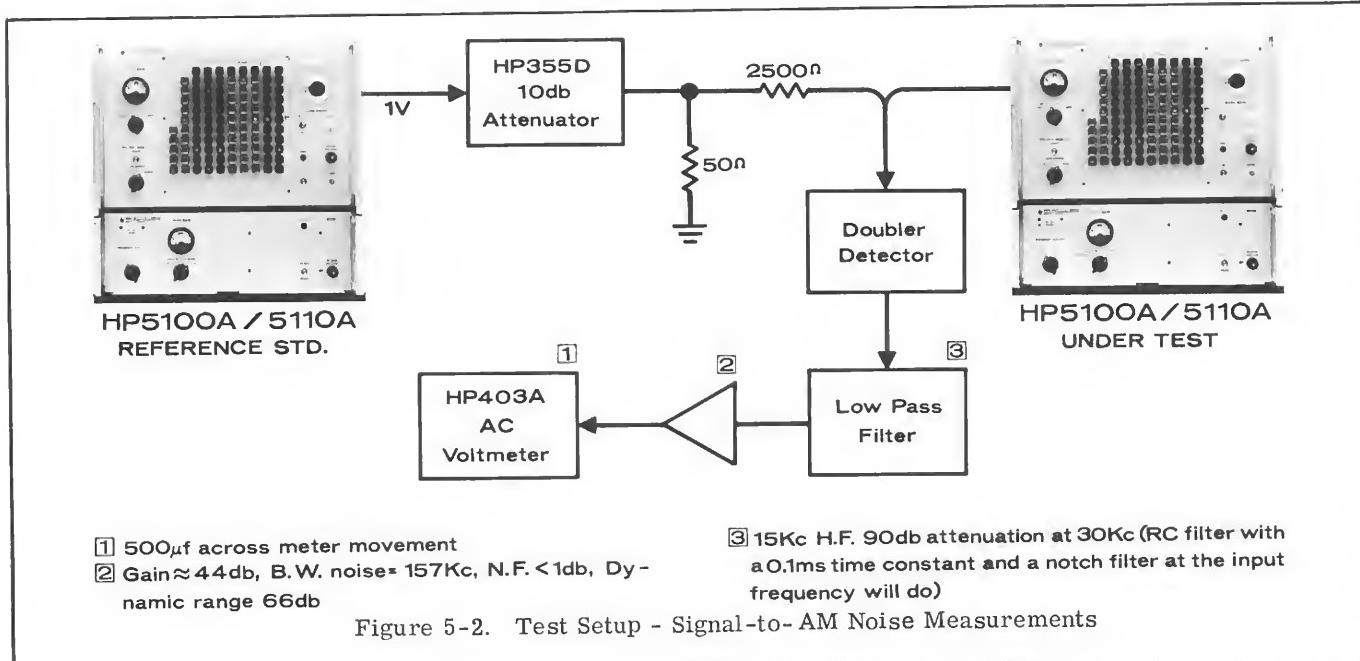


Figure 5-1. Test Setup - Signal-to-Phase Noise Measurements

6. SIGNAL-TO-AM NOISE RATIO (above 100 kc):

Connect equipment as shown in Figure 5-2. Select output frequency using front-panel pushbuttons (do not use SEARCH OSCILLATOR). Set output frequency of Ref Model 5100A to be same as Model 5100A under test plus 100 cps. Turn on amplifier and measure output voltage on db scale of special AC Voltmeter. This is the reference signal; its level is 60 db down with respect to the carrier. Disconnect the signal from the reference Model 5100A. Read the new level on the voltmeter. This reading, referred to the reference level, which was 60 db down, gives the signal-to-AM noise measurement.

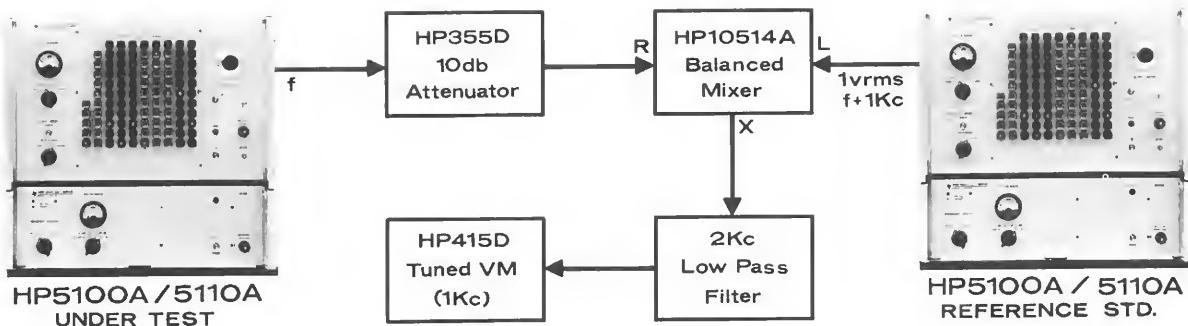
Table 5-2. In-Cabinet Performance Check (cont'd)



7. RMS FRACTIONAL FREQUENCY DEVIATION:

Rms fractional frequency deviation is a measure of the spectral purity of a signal. To measure rms fractional frequency deviation directly requires considerable engineering effort in the design and construction of appropriate equipment. The rms fractional frequency deviation is checked indirectly in the checks of signal-to-phase noise, signal-to-am noise, signal-to-spurious signal, and signal-to-harmonic signal ratios; if these are within their specifications, then the rms fractional frequency deviation of the signal is within its specification.

8. SPURIOUS SIGNALS:



Make the measurements using setup shown in Figure 5-3 and the following procedure:

1. Connect the equipment as shown in Figure 5-3.

Table 5-2. In-Cabinet Performance Check (cont'd)

2. Set Attenuator to 80 db and range switch on 415D to 30 or 40.
3. With reference local oscillator at 22 Mc and the unit under test at 22.001 Mc, adjust the tuned voltmeter for an on-scale reading. Note the meter reading and range switch setting in db. This is the reference reading.
4. Set the unit under test to 16.99 Mc and offset reference local oscillator 1 kc (example 16.181 Mc). Set attenuator to 10 db and adjust the Voltmeter for an on-scale reading. The difference between this reading and the reference reading is the signal-to-spurious signal ratio (for other spurious checks see Table 5-3).
5. Following is example of settings:

The reference settings are as follows:

| | |
|---------------------|--------|
| Attenuator at 80 db | 80 |
| 415D at 30 (X2) | 60 |
| Meter set at 0 | 0 |
| Total | 140 db |

The spurious readings are as follows:

| | |
|--|-------|
| Attenuator at 10 db | 10 |
| 415D at 40 (gain of 20 db, 60 - 20) | 40 |
| Meter reads | -3 |
| 1.5 db (X2) | |
| Total | 47 db |

$$\text{Signal/Spurious} = 140 - 47 = 93 \text{ db}$$

NOTE: The tuned voltmeter is calibrated for an input from a square law device (output voltage proportional to power input). The db reading must be doubled when using the voltmeter in the circuit of Figure 5-3. That is, an indication of 1 db is really 2 db in this application.

Disconnect Synthesizer under test and note the noise level. This level represents the ultimate sensitivity of the measurement test setup.

9. HARMONIC SIGNALS:

Use Φ 310A Wave Analyzer for signals up to 500 kc. Use equipment shown in Figure 5-3 for frequencies of 500 kc and higher and proceed as follows:

1. Connect output of Model 5100A under test to "L" input of Φ 10514A.
2. Offset reference local oscillator 1 kc from frequency of Model 5100 under test and connect to 355D set to 70 db.
3. Connect output of 355D to "R" input of Φ 10514A. The rest of the test setup is shown in Figure 5-3.
4. Adjust 415D for an on-scale reading. Note meter reading and range setting in db. This is the reference reading.
5. Offset output frequency of reference Synthesizer 1 kc from frequency of desired harmonic of output. Set 355D to 40 db.

Note: The level of signal input to the mixer should be 10 mv or less in order to avoid generation of sizable low order harmonic content within the mixer itself.

6. Observe reading on Voltmeter. The difference between this reading and the reference reading is the signal-to-harmonic signal ratio for that harmonic of the Model 5100A under test.

Table 5-3. Troubleshooting

| OUTPUT ABSENT Mc | OUTPUT PRESENT Mc | REASON | CHECK |
|---------------------|-------------------------------|---------------------------|--|
| 9 | 19, 29, 39 & 49 | No 390 Mc | A13 Multiplier Assembly 39/390 Mc or A20CR5 diode switch in A20 Switch Assembly 350/390 Mc |
| 11 | 1, 21, 31 & 41 | No 380 Mc | A14 Multiplier Assembly 38/380 Mc or A20CR4 diode switch in A20 |
| 21 | 1, 11, 31 & 41 | No 370 Mc | A15 Multiplier Assembly 37/370 Mc or A20CR3 diode switch in A20 |
| 31 | 1, 11, 21 & 41 | No 360 Mc | A16 Multiplier Assembly 36/360 Mc or A20CR2 diode switch in A20 |
| 41 | 1, 11, 21 & 31 | No 350 Mc | A17 Multiplier Assembly 35/350 Mc or A20CR1 diode switch in A20 |
| 1 | 2, 3, 4, 5, 6, 7, 8 & 9 | No 31 Mc | Cable from 45110A or A19A9 diode switch in A19 Switch Assembly 30/39 Mc |
| 2 | 1, 3, 4, 5, 6, 7, 8 & 9 | No 32 Mc | Cable from 45110A or A19A8 |
| 3 | 1, 2, 4, 5, 6, 7, 8 & 9 | No 33 Mc to 2nd UHF Mixer | A19A7 diode switch in A19 |
| 4 | 1, 2, 3, 5, 6, 7, 8 & 9 | No 34 Mc | Cable from 45110A or A19A6 |
| 5 | 1, 2, 3, 4, 6, 7, 8 & 9 | No 35 Mc | Cable from 45110A or A19A5 |
| 6 | 1, 2, 3, 4, 5, 7, 8 & 9 | No 36 Mc | Cable from 45110A or A19A4 |
| 7 | 1, 2, 3, 4, 5, 6, 8 & 9 | No 37 Mc | Cable from 45110A or A19A3 |
| 8 | 1, 2, 3, 4, 5, 6, 7 & 9 | No 38 Mc | Cable from 45110A or A19A2 |
| 9 | 1, 2, 3, 4, 5, 6, 7 & 8 | No 39 Mc to 2nd UHF Mixer | A19A1 diode switch in A19 |
| 9, 19, 29, 39 or 49 | 10, 18, 28, 38 & 48 | No 39 Mc | Cable from 45110A |
| 10 | 1, 2, 3, 4, 5, 6, 7, 8 & 9 | No 30 Mc | Cable from 45110A or A19A20 |
| 1,000,000.00 | 1,xxx,xxx.xx (x is not 0) | No 3.0 Mc | Cable from 45110A to A3 3-4 Mc Switch |
| 1,111,000.00 | 1,xxx,xxx.xx (x is not 1) | No 3.1 Mc | Cable from 45110A to A3 3-4 Mc Switch |
| 1,222,000.00 | 1,xxx,xxx.xx (x is not 2) | No 3.2 Mc | Cable from 45110A to A3 3-4 Mc Switch |
| 1,333,000.00 | 1,xxx,xxx.xx (x is not 3) | No 3.3 Mc | Cable from 45110A to A3 3-4 Mc Switch |

Table 5-3. Troubleshooting (cont'd)

| OUTPUT ABSENT Mc | OUTPUT PRESENT Mc | REASON | CHECK |
|-----------------------------|------------------------------|--|--|
| 1,444,000.00 | 1,xxx,xxx.xx (x is not 4) | No 3.4 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| 1,xxx,000.00 (x is 5) | 1,xxx,xxx.xx (x is not 5) | No 3.5 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| x is 6 | x is not 6 | No 3.6 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| x is 7 | x is not 7 | No 3.7 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| x is 8 | x is not 8 | No 3.8 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| x is 9 | x is not 9 | No 3.9 Mc | Cable from 5110A to A3 3-4 Mc Switch |
| No output for any frequency | | No 33, 24 or 3 Mc | Cable from 5110A or defective A18 33/330 Multiplier Assembly |
| No output for any frequency | | Fuse on rear panel has to be replaced. | Overloading in Remote circuit or in pushbutton switch, Assembly A1 |

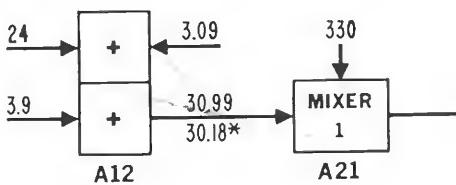
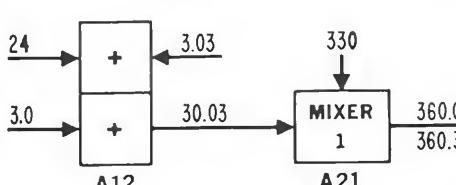
| ALL FREQUENCIES IN MEGACYCLES ASTERISK (*) INDICATES SPURIOUS FREQUENCIES | TROUBLE |
|--|-------------------------------------|
| TEST NO. 1 CALIBRATION TEST FREQ. 22.000 SPURIOUS 22.001 (NOTE: USE FIGURE 5-3 AS A TEST SET-UP WHEN SETTING UP REFERENCE AND LOOKING FOR SPURIOUS FREQUENCIES) | |
| TEST NO. 2 TEST FREQ. 16.99 SPURIOUS 16.18  <p>2nd HARMONIC OF 3.09MC ADDS TO 24MC TO GIVE 30.18MC</p> | A12 FINAL MIXER OUTPUT TUNING |
| TEST NO. 3 TEST FREQ. 11.03 SPURIOUS 11.36  <p>12th HARMONIC OF 30.03MC IS 360.36MC AND APPEARS IN OUTPUT OF FIRST MIXER</p> | A21 LOW BIAS HIGH MIXER DRIVE |

Table 5-3. Troubleshooting (cont'd)

| | | |
|---|--|--|
| TEST NO. 4 TEST FREQ. 11.30 SPURIOUS 10.60 | 2nd HARMONIC OF 30.3MC ADDS TO 330MC AND APPEARS IN SECOND MIXER OUTPUT | A21 BAD OUTPUT FILTER |
| | | |
| TEST NO. 5 TEST FREQ. 19.70 SPURIOUS 10.00 | 10th HARMONIC 39MC APPEARS IN OUTPUT OF SECOND MIXER | A22 LOW BIAS BAD 30-39 SWITCH |
| | | |
| TEST NO. 6 TEST FREQ. 16.95 SPURIOUS 16.00 | 11th HARMONIC OF 36MC APPEARS IN OUTPUT OF SECOND MIXER | A22 LOW BIAS BAD 30-39 SWITCH |
| | | |
| TEST NO. 7 TEST FREQ. 11.11 SPURIOUS 42.11 | 2nd HARMONIC 31MC ADDS TO 360.11MC TO GIVE 422.11MC | A22 OUTPUT TUNING BAD OUTPUT FILTER |
| | | |
| TEST NO. 8 TEST FREQ. 49.50 SPURIOUS 53.00 | 6th HARMONIC OF 399.5MC MIXES WITH 7th HARMONIC OF 350MC (LOCAL OSCILLATOR SET TO 26.5MC AND DOUBLER USED TO OBTAIN 53MC) | A23 DIODE UNBALANCE |
| | | |

Table 5-3. Troubleshooting (cont'd)

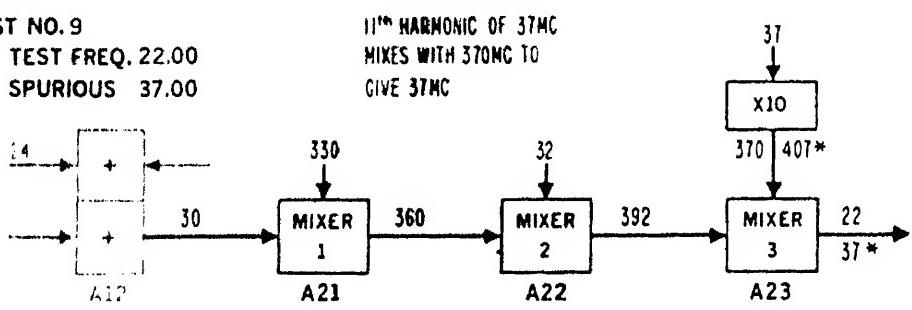
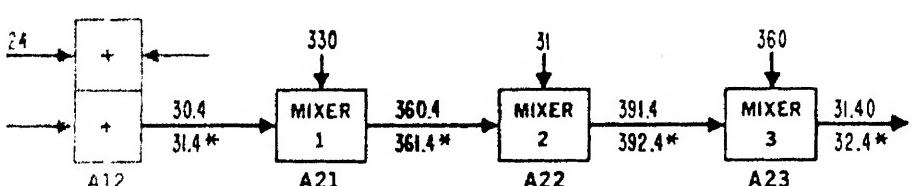
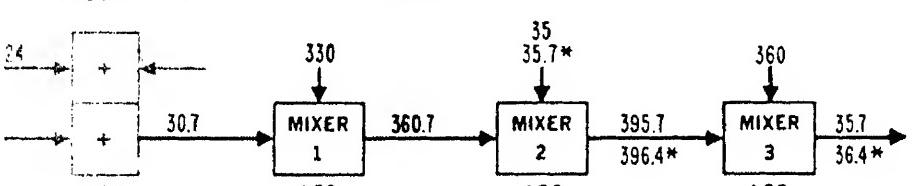
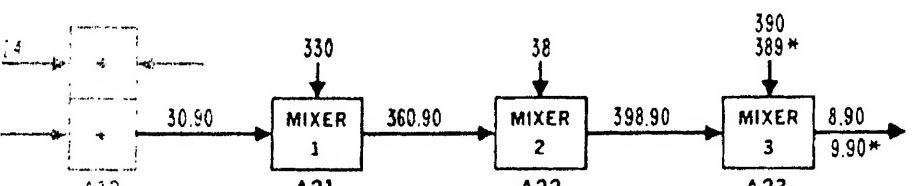
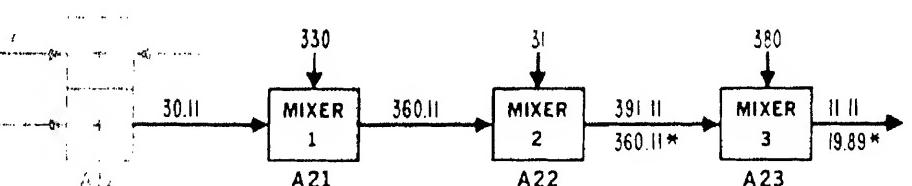
| | | | |
|--|---|--|--------------------------------------|
| TEST NO. 9 TEST FREQ. 22.00 SPURIOUS 37.00 | 11 th HARMONIC OF 37MC MIXES WITH 370MC TO GIVE 37MC |  | A23 DIODE UNBALANCE |
| TEST NO. 10 TEST FREQ. 31.40 SPURIOUS 32.40 | 31.40MC OUTPUT MIXES WITH 330MC DUE TO COUPLING OF POWER SUPPLY LEADS |  | A25 COUPLING DECOPLING CAPACITORS |
| TEST NO. 11 TEST FREQ. 35.70 SPURIOUS 36.40 | 35.7MC OUTPUT MIXES WITH 360.7MC DUE TO COUPLING OF POWER SUPPLY LEADS |  | A25 COUPLING DECOPLING CAPACITORS |
| TEST NO. 12 TEST FREQ. 8.90 SPURIOUS 9.90 | SPURIOUS SIGNAL IMC BELOW 390MC |  | A13 INPUT TUNING |
| TEST NO. 13 TEST FREQ. 11.11 SPURIOUS 19.89 | 360.11MC MIXES WITH 380MC |  | A22 BALANCE ADJUST |

Table 5-3. Troubleshooting (Cont'd)

"False" Spurious Measurements

Care should be taken to be sure that spurious signals are true spurious signals, and that the levels measured are true. Certain traps are to be avoided. For instance, a response will occur if $N \times f_D - M \times f_{LO} = 1 \text{ kc}$, where f_D is the test signal frequency at high level and f_{LO} is the local oscillator frequency and N and M are integers. This response is created in the mixer and is not a true spurious response. $M \times f_{LO}$ is necessarily present, $N \times f_D$ depends, non-linearly, on the level of f_D . If the level of f_D is dropped, this response will decrease more rapidly than the f_D level. This test can be applied as a check on the authenticity of any spurious signal detected; it should vary linearly with the input level.

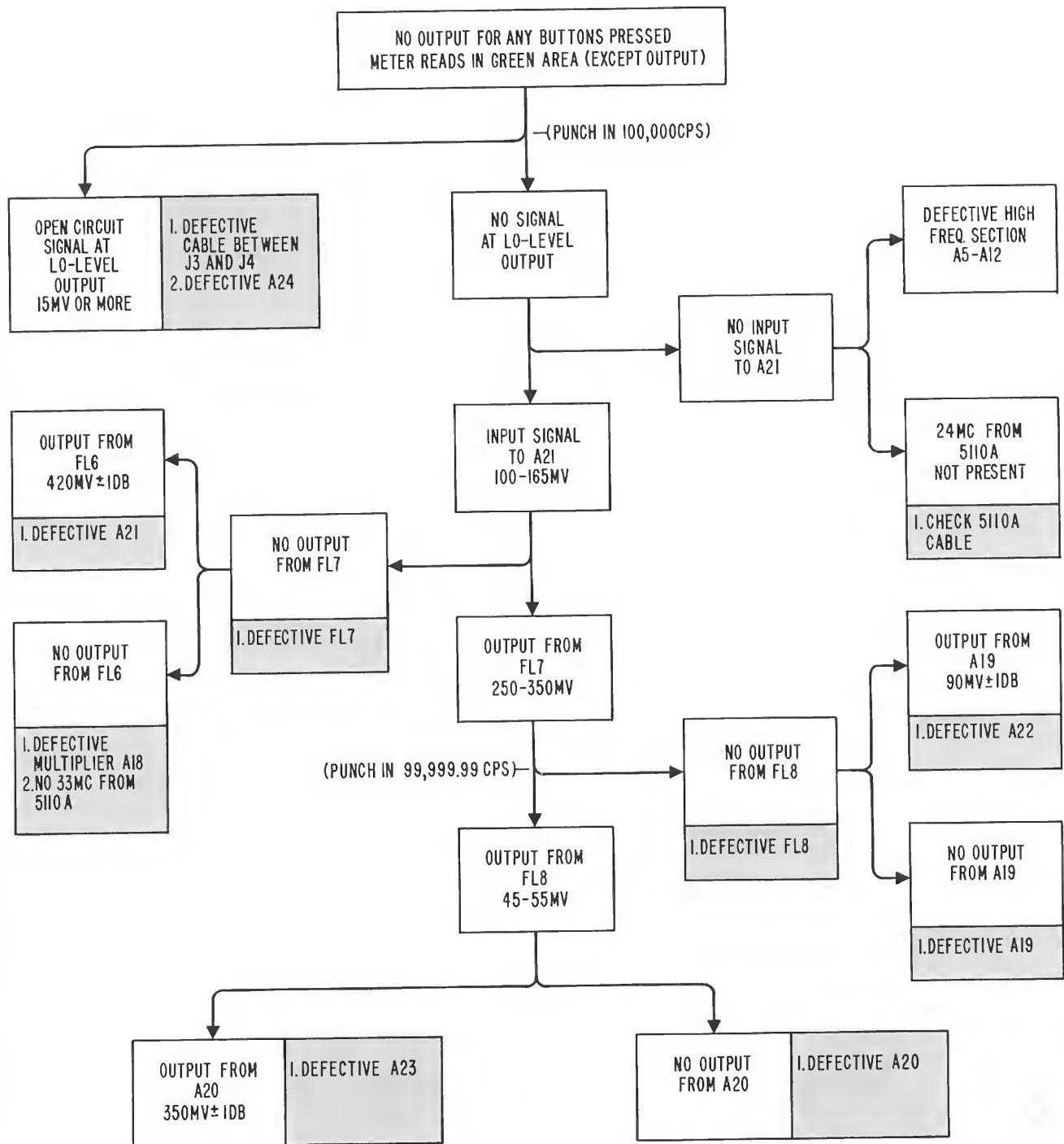


Figure 5-4. Troubleshooting Chart

Table 5-3. Troubleshooting (cont'd)

Check Mixer/Filter A12 and Mixer/Dividers A5-A11 as follows: remove Mixer/Filter A12 and check ac signal level on Connector Block A4 socket.

| PIN | A12 | SIGNALS | AC VOLTAGES |
|--------------------|-----|--------------------------------------|-------------|
| 1 | | 3-4 Mc from A3J1 | 50 mv |
| 2 | | 3.0 - 3.1 Mc from A11 | 35 - 60 mv |
| 3 | | NC | - |
| 4 | | -Dc Voltage (do not short to ground) | - |
| 5 | | 30 - 31 Mc to A21 | - |
| 6 | | 24 Mc from A4A2 | 1 v rms |
| Toward front Panel | | +Dc Voltage (do not short to ground) | - |

Socket for A5-A11 is same except pin 3 is 3.0-3.1 Mc output to next assembly and pin 5 is blank.

- a. No 3-4 Mc signal at pin 1 - defective cable from A4 to A3.
- b. No 3.0-3.1 Mc signal at pin 2 - remove Mixer/Divider A8 and check ac signal level on socket for A8. Acceptable signal level same as before except 24 Mc level can be .5 to 1V. If signal levels are normal then defective assembly is A8, A9, A10 or A11. If 3.0-3.1 Mc signal is absent, then defective assembly is A5, A6, or A7. If no 24 Mc at pin 6 see (c) or (d). To split the possible defective assemblies in half, check signal levels again on socket of either A6 or A10. If signal levels are normal on socket of A6, then A6 or A7 is defective. If 3.0-3.1 Mc signal is absent, then A5 is defective. If signal is normal at socket at A10, then A10 or A11 is defective. If 3.0-3.1 Mc signal is absent on socket of A10, then A8 or A9 is defective.

Note: Decade test cable & Stock #05100-6180 (3" length with mating connectors to socket) can substitute for A5. Remove A5 and connect test cable between pin 2 and pin 3 of A5 socket.

- c. No 24-Mc signal at pin 6 on socket for A12 - defective amplifier board assembly A4A2.
- d. No 24-Mc signal at pin 6 on socket for A11 - defective A4A3.
- e. No 24-Mc signal at pin 6 on socket for A10 to A5 - defective A4A4.

Table 5-4. Assembly or Module Identifications

| | | | |
|--------------------------------|------------|--------------------------|------------|
| A1 Pushbutton Assembly | 05100-6003 | A16 Multiplier 36/360 Mc | 05100-6019 |
| A2 Search Oscillator | 05100-6005 | A17 Multiplier 35/350 Mc | 05100-6020 |
| A3 3-4 Mc Switch | 05100-6006 | A18 Multiplier 33/330 Mc | 05100-6021 |
| A4 Connector Block | 05100-6004 | A19 30 to 39 Mc Switch | 05100-6010 |
| A5 thru | | A20 350 to 390 Mc Switch | 05100-6011 |
| A11 Mixer/Divider - 3.0-3.1 Mc | 05100-6001 | A21 1st UHF Mixer | 05100-6012 |
| A12 Mixer/Filter 30-31 Mc | 05100-6002 | A22 2nd UHF Mixer | 05100-6013 |
| A13 Multiplier 39/390 Mc | 05100-6016 | A23 3rd UHF Mixer | 05100-6014 |
| A14 Multiplier 38/380 Mc | 05100-6017 | A24 Output Amplifier | 05100-6015 |
| A15 Multiplier 37/370 Mc | 05100-6018 | A25 Power Supply | 05100-6007 |

5-22. ADJUSTMENTS.

5-23. GENERAL.

5-24. There is no periodic adjustment necessary for the proper operation of the 5100A. All internal adjustments, especially the power supply voltages, should not be adjusted until checks prove operation of the Frequency Synthesizer is out of specifications. The power supply in this instrument is extremely stable for long periods of time. If the voltages are essentially correct (± 100 mv for 6.3 volts and ± 200 mv for -12.6 volts) and regulate within ± 100 microvolts between low and high line voltage, there is no reason to make an adjustment. Do not make adjustments with a 1% voltmeter.

5-25. Adjustments should not be attempted until it is verified that the module in question is at fault. In the following paragraphs normal operation of each module or assembly is described first followed by adjustment procedure. The input level, frequency, power to the module, and the measuring technique should all be checked before assuming the module is in need of adjustment or repair. See Figures 5-7 through 5-9 for location of modules and assemblies.

5-26. PUSHBUTTON SWITCH ASSEMBLY A1.

5-27. NORMAL OPERATION. When the front panel FREQUENCY SELECTION switch is in the LOCAL position, the Model 5100A output frequency is selected by pressing one pushbutton in each column, connecting -12.6 volt enabling voltage to the appropriate switch matrices in the 3 to 4 Mc Switch Module A3. Mechanical interlocking prevents pressing more than one pushbutton in any column.

5-28. OPERATIONAL CHECK. The Pushbutton Switch Assembly is checked by using the procedure of Item 2 of the In-cabinet Performance Check, Table 5-2.

5-29. SEARCH OSCILLATOR MODULE A2.

5-30. NORMAL OPERATION. Transistor Q1 is a Colpitts oscillator, operating in the 3 to 4 Mc range, controlled by a -1 to -11-volt dc signal applied between varactors CR5 and CR6. The output is amplified by Q2 and after level adjustment and filtering is available at J1. Output level is nominally 50 mv.

5-31. OPERATION CHECKS. The tracking characteristics of the Search Oscillator are checked in Item 4 of the In-cabinet Performance Check, Table 5-2.

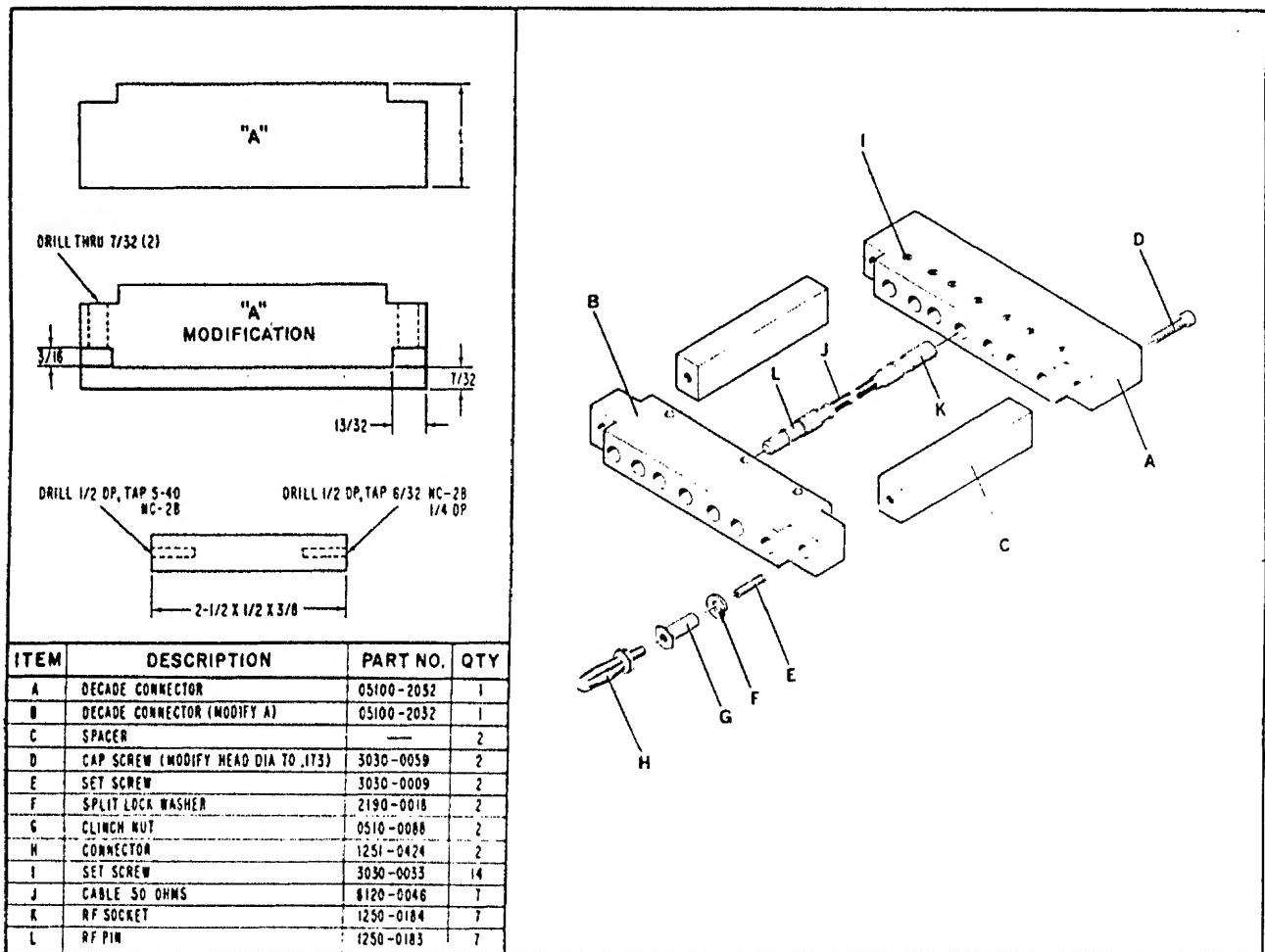


Figure 5-5. Extension Connector (Mixer Connector)

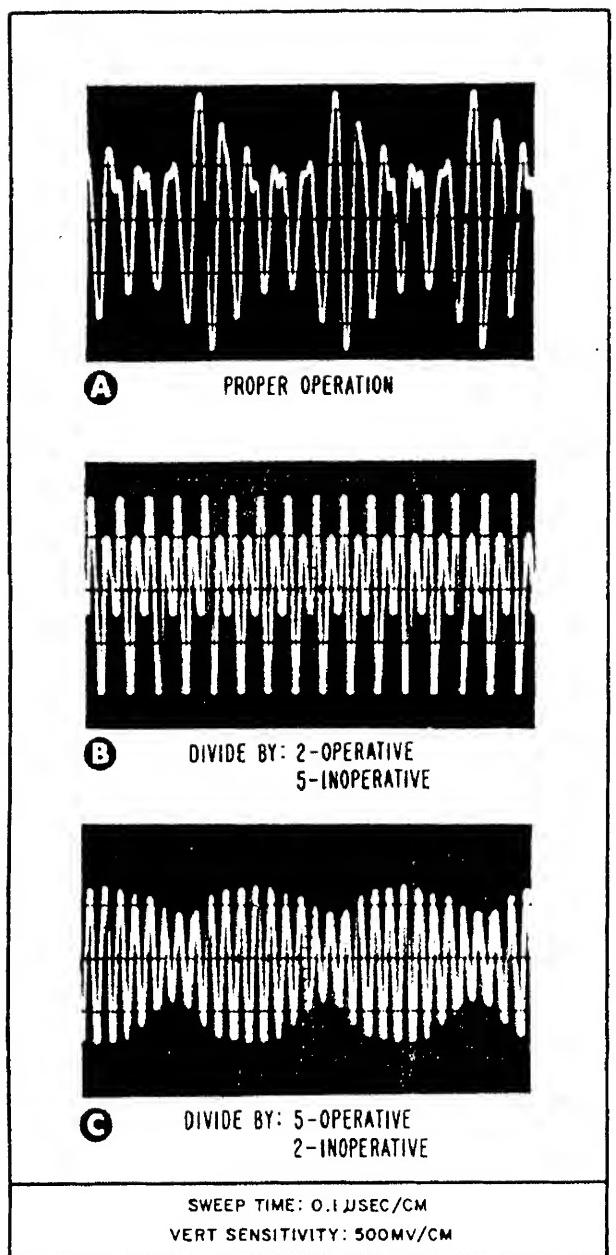


Figure 5-6. Divider Waveforms

5-32. To measure the output level of the Search Oscillator, disconnect the BNC-terminated cable labeled "Search Oscillator", and terminate the Search Oscillator output with a 50-ohm load. Measure the output voltage over the 3 to 4 Mc range of the Search Oscillator using an ϕ Model 411A RF Millivoltmeter. The output should be 50 mv \pm 1/2 db over the frequency range.

5-33. The variation in output level may be centered about 50 mv using the following procedure. Set the Search Oscillator frequency to 3.5 Mc (SEARCH OSCILLATOR dial to 5). Adjust R4 so output is 52 mv. Repeat procedure of Paragraph 5-32 to check centering of output voltage variation. Readjust R4 as necessary for optimum centering of output voltage variation.

5-34. TRACKING ADJUSTMENT. Disconnect the BNC-terminated "Search Oscillator" cable from the Search Oscillator output BNC connector. Connect an electronic counter to the output connector through a 50-ohm feed-thru termination. Set SEARCH switch to REMOTE. Connect -1 volt dc from a voltage standard (ϕ Model 741A or equivalent) to the rear-panel SEARCH connector. Adjust L1 so frequency observed on the counter is 3.00 Mc.

5-35. Change the voltage at the SEARCH oscillator to -11 volts. Frequency observed on counter should be 4.000 Mc. If not, note how many kc and which direction the difference is. Change the voltage at the SEARCH connector back to -1 volt. Adjust FREQ ADJUST R16 so that the output frequency is exactly the same number of kc from 3.000 Mc and in the same direction as was observed at 4.000 Mc. (If the 4 Mc frequency reading was 10 kc higher than 4.000 Mc, adjust R16 so 3 Mc output is 3.010 Mc.) Now adjust L1 to return the frequency to exactly 3.000 Mc.

5-36. Switch the voltage at the SEARCH connector block to -11 volts and note the output frequency; it should be 4.000 Mc. If it is not 4.000 Mc, repeat the procedure of Paragraph 5-35 until tracking is correct.

5-37. Switch the voltage at the SEARCH oscillator between -1 and -11 volts in 1-volt steps. Each 1-volt change should produce a 100 kc increase in output frequency. The output frequency should be within \pm 50 kc of the correct frequency.

5-38. 3 TO 4 MC SWITCH MODULE A3.

5-39. NORMAL OPERATION. The 3 to 4 Mc Switch Module contains 88 diode switch matrices, corresponding to 88 front-panel pushbuttons in the columns with the "S" pushbuttons. One switch matrix in each column is turned "on" by applying a -12.6 volt enabling voltage from a LOCAL or REMOTE source as selected by the front panel FREQUENCY SELECTION switch. Each row of pushbuttons is represented by an input to A3. Each column of pushbuttons is represented by an output from A3. Insertion loss of the switch matrices is typically less than 3 db, and the "on/off" ratio in column 3 is greater than 105 db, in column 4 greater than 93 db, and in columns 5-10 greater than 83 db.

5-40. OPERATIONAL CHECKS. On-off switching action and switching time of the 3 to 4 Mc Switch Assemblies are tested using the procedures of Item 2 of the In-cabinet Performance Check, Table 5-2. The test below for insertion loss may be helpful in checking for a switch with marginal performance.

5-41. Insertion loss is the measure of switch conduction when the switch is "on", comparing the output signal to the input signal, with the input signal as 0db reference.

5-42. The inputs to the 3 to 4 Mc Switch Module are J9, and J10 through J19, corresponding to row S, and rows 0 through 9, respectively. The outputs of the 3 to 4 Mc Switch Module are J1 through J8, corresponding to columns 3 through 10 respectively, on front panel, with column 3 being the first column from

the left with the "S" pushbutton and column 10 being the right one. There is one switch matrix in the 3 to 4 Mc Switch for each of the digital frequency selection pushbuttons on the front panel which have "S" pushbuttons.

5-43. To measure insertion loss, connect the input of the desired row through a BNC "T". Connect another BNC "T" in the output for the desired column. Using the appropriate front panel pushbutton or remote programming, turn the switch "on". Measure the input on an $\frac{1}{2}$ 3400 A RMS Voltmeter (use db scale). Measure the output signal of the switch matrix with the Voltmeter. The difference in db readings is the insertion loss of that switch matrix. Insertion loss is normally 1.5 db, ± 1 db in columns 3 and 4, and 2.0 db, $\pm 1/2$ db in columns 5 through 10.

5-44. CONNECTOR BLOCK A4.

5-45. NORMAL OPERATION. The Connector Block provides power and signal connections for Modules A5 through A12. It provides amplification for the 24 Mc signal from the 5110A before connecting it to Modules A5 through A12. The 3 Mc signal from the 5110A is amplified here before being connected to the front panel CIRCUIT CHECK meter. The -12.6 volts and +6.3 volts from Power Supply Module A25 are normalized here before being connected to the front panel meter.

5-46. OPERATIONAL CHECK. The connector Block is checked indirectly by proper operation of the Model 5100A in the In-cabinet Performance Check, Table 5-2.

5-47. A special tool for removing Coaxicon connectors from the Connector Block is made by AMP Inc. The part number is A-mp No. 305183-8, Type IV.

5-48. MIXER/DIVIDERS A5-A11.

5-49. NORMAL OPERATION. The first mixing stage combines the 1V 24 Mc signal at Pin 6 and the 60 mv 3 or 3.0 Mc to 3.1 Mc signal at Pin 2. The sum of these two signals (27.0 Mc to 27.1 Mc) is added to the 50 mv 3 to 4 Mc signal at Pin 1, and the sum of these (30 Mc to 31 Mc) is filtered and divided by 10 to produce an output signal of 3.0 Mc to 3.1 Mc at 60 mv. All signal and power connections are made through Connector Block A4.

5-50. OPERATIONAL CHECKS. To quickly check to see if a Mixer/Divider is operating properly, proceed as follows:

a. Remove the Module from the Model 5100A and supply it with power using the fabricated connector shown in Figure 5-5.

b. Connect a 24 Mc, 1V signal to the input connector for terminal 6. Measure the frequency with an electronic counter.

c. Connect a 3.05 Mc, 60 mv signal to the input connector for terminal 2. Measure frequency with electronic counter. Supply 3.05 Mc from 606A.

d. Connect 3.5 Mc at 50 mv to input connector for terminal 1. Measure frequency with an electronic counter. Supply 3.5 Mc from Sweep Generator.

e. Observe output at connector for terminal 3 with RF Voltmeter and Electronic Counter. The output level should be at least 60 mv open circuit, and the output frequency equal to the sum of the input frequencies divided by 10.

5-51. MIXER ADJUSTMENTS. If Mixer adjustments are necessary, proceed as follows:

a. Remove the Mixer/Divider Module from the Model 5100A and connect it to its normal input with the extension connector diagrammed in Figure 5-5. Remove cover from Mixer/Divider Module.

b. Connect 24 Mc, 1V to pin 6.

c. Connect 3.05 Mc, 60 mv to pin 2 from Sweep Generator.

Note

The slugs in all the tuning coils have been set with a drop of dope. Rather than freeing all these slugs with a drop of acetone, it would be wise to compare the outputs of the various stages first, to see if the troublesome stage can be localized.

d. Connect 411A to junction of C18 and C19. Short L13 to chassis and tune L12 to peak 411A reading (20 mv to 50 mv).

e. Remove short from L13 and tune L13 to null 411A reading (18 mv to 40 mv).

f. Connect 411A to junction of C23 and C24.

g. Short L16 to chassis and tune L15 to peak 411A reading (300 mv to 700 mv).

h. Remove short from L16 and short L17. Tune L16 to null 411A reading (50 mv to 120 mv).

i. Remove short from L17 and tune L17 to peak 411A reading (130 mv to 270 mv).

j. Connect 411A to junction of C28 and C29.

k. Sweep signal at pin 2 between 2.5 Mc and 3.5 Mc. Bandwidth between -3 db points should be between 300 kc and 500 kc, centered 3.0 Mc to 3.1 Mc, with a level at band center of more than 30 mv rms. If band is not well centered, try adjusting L13 to center the bandwidth. If this fails, repeat Paragraphs 5-51b through i, with signal at pin 2 adjusted to compensate for bandwidth centering.

5-52. 30 MC FILTER ALIGNMENT. To align the 30 Mc filter (at the Divider Board input, proceed as follows:

a. Remove the Mixer/Divider Module from the Model 5100A and connect it to its normal input with the extension connector diagrammed in Figure 5-5. Remove cover from Mixer/Divider Module.

b. Set 606A to 30.50 Mc and connect through a 390-ohm resistor to junction of C61 and C62 with cable removed from junction.

c. Connect 411A to junction of C61 and C62.

d. Set 606A output level to 0.5 volt rms.

e. Short L62 to chassis and tune L61 to peak 411A indication.

f. Remove short from L62 and tune L62 to null 411A indication.

g. Set 606A output level to 60 mv.

h. Connect 411A to junction of C66 and C67.

i. Short L65 and tune L64 to peak 411A indication (200 mv to 300 mv).

j. Remove short from L65 and short L66.

k. Adjust L65 to null 411A indication (10 mv to 16 mv).

l. Remove short from L66 and short L67.

m. Adjust L66 to peak 411A indication (80 mv to 140 mv).

n. Remove short from L67 and tune L67 to null 411A indication (30 mv to 50 mv).

o. Connect 411A through 1 pf capacitor to CR51 cathode.

p. Tune T52 to peak 411A indication.

q. Connect 411A to Q53 base. Voltage should be more than 120 mv rms.

r. Vary 606A from 29.5 Mc to 31.5 Mc. Bandwidth (-3 db points referred to level at 30.5 Mc) must be at least 1.25 Mc apart, centered about 30.5 Mc. Symmetry is adjusted by L62 and/or L67 to center bandwidth.

s. Remove 606A and 390-ohm resistor from junction of C61 and C62 and reconnect cable.

t. Connect 606A to pin 2.

u. Set 606A to 3.0 Mc at 60 mv level. Leave 411A connected to Q53 base.

v. Connect 3.5 Mc, 50 mv signal to pin 1 from Sweep Generator.

w. Connect 24 Mc, 1V signal to pin 6.

x. Sweep signal at pin 1 from 2.5 Mc to 4.5 Mc. Bandwidth (-3 db points referred to level at 3.5 Mc) must be at least 1.20 Mc, centered on 3.5 Mc. Cen-

tering may be adjusted using L61. Level at band center should be more than 120 mv.

5-53. DIVIDER ADJUSTMENT. If divider adjustments are necessary, proceed as follows:

a. Remove the Mixer/Divider Module from the Model 5100A and connect it to its normal input with the extension connector diagrammed in Figure 5-5. Remove cover from Mixer/Divider Module.

b. Disconnect jumper in Q53 base circuit.

c. Set 606A to 25 Mc at a level providing 200 mv at Q53 base and connect to Q53 base.

d. Clamp oscilloscope probe to body of C78; be sure oscilloscope is not directly connected to circuit at this point.

e. Adjust L68 until oscilloscope indicates that signal is being divided by two (see Figure 5-6).

f. Vary 606A frequency from 25 Mc to 40 Mc. Division by two should occur at all frequencies between 25.0 Mc and 35.0 Mc.

g. Connect oscilloscope horizontal input to 3 Mc at A4J5 (pin 2) using a BNC "T". The oscilloscope probe remains clamped around the body of C78. Set oscilloscope controls so a Lissajous pattern may be observed.

h. Set 606A to 28.5 Mc. Adjust L70 until a 5-to-1 Lissajous pattern is observed.

i. Sweep 606A frequency from 26 Mc to 34 Mc. Division by 5 should occur at any frequency between 29 Mc and 32 Mc.

j. Remove oscilloscope probe from C78.

k. Disconnect 606A from Q53 base and replace jumper in Q53 base circuit.

l. Connect 606A to pin 2.

m. Set 606A to 3.0 Mc at 60 mv.

n. Connect 3.0 Mc, 50 mv signal to pin 1 from Sweep Generator.

o. Connect 24 Mc, 1V signal to pin 6.

p. Connect 411A to pin 3.

q. Sweep signal at pin 1 between 3.0 Mc and 4 Mc.

r. Check level of output (pin 3) signal when signal at pin 1 is 3.0 Mc, 3.5 Mc, and 4.0 Mc. Levels should be within 12 mv of each other, centered from 35 mv to 60 mv.

5-54. MIXER/FILTER A12.

5-55. NORMAL OPERATION. The first mixing stage combines the 1V 24 Mc signal at pin 6 and the 60 mv

3.0 Mc to 3.1 Mc signal at Pin 2. The sum of these two signals (27.0 Mc to 27.1 Mc) is added to the 50 mv 3 to 4 Mc signal at Pin 1, and the sum of these (30 Mc to 31 Mc) is filtered and amplified to provide an output of 150 mv at Pin 5.

5-56. OPERATIONAL CHECKS. To quickly check to see if the Mixer/Filter is operating properly, proceed as follows:

a. Remove the Module from the Model 5100A and supply it with power using the fabricated connector as shown in Figure 5-5.

b. Connect a 24 Mc, 1V signal to the input connector for terminal 6. Measure frequency with an electronic counter.

c. Connect a 3.05 Mc, 60 mv signal to the input connector for terminal 2. Measure frequency with an electronic counter. Supply 3.05 Mc from 606A.

d. Connect 3.5 Mc at 50 mv to input connector for terminal 1. Measure frequency with an electronic counter. Supply 3.5 Mc from Sweep Generator.

e. Observe output at BNC connector for terminal 5 with RF Voltmeter and Electronic Counter. The output level should be 150 mv, and the output frequency equal to the sum of the input frequencies.

5-57. MIXER ADJUSTMENTS. This Mixer is identical to those in A5-A11. Use the procedure of Paragraph 5-51 for Mixer adjustments.

5-58. 30 MC FILTER ALIGNMENT. To align the 30 Mc filter (at the Filter Board input), proceed as follows:

a. Connect 606A through a 390-ohm resistor to junction of A2C61 and A2C62.

b. Set 606A to 30.50 Mc, output level to 0.5V rms.

c. Connect 411A to junction of A2C61 and A2C62.

d. Short L62 to chassis and tune L61 to peak 411A indication.

e. Remove short from L62 and tune L62 to null A11A indication.

f. Set 606A output level to 60 mv.

g. Connect 411A to junction of C66 and C67.

h. Short L65 and tune L64 to peak 411A indication (200 mv to 300 mv).

i. Remove short from L65 and short L66. Tune L65 to null 411A indication (10 mv to 16 mv).

j. Remove short from L66 and short L67. Tune L66 to peak 411A indication (80 mv to 140 mv).

k. Remove short from L67 and tune L67 to null 411A indication (30 mv to 50 mv).

l. Connect 411A to Q53 base.

m. Tune T51 to peak 411A reading. Level should be more than 130 mv rms.

o. Connect a "T" with a 50-ohm load to 411A input.

p. Connect 411A to pin 5 (30-31 Mc output, 150 mv level).

q. Tune L68 to peak 411A reading.

r. Adjust R64 to set output level at 150 mv rms.

s. Connect 411A to Q53 base. Remove 50-ohm load.

t. Vary 606A from 29.5 Mc to 31.5 Mc. Bandwidth (-3 db points referred from 30.5 Mc level) should be at least 1.25 Mc, centered on 30.5 Mc. Adjust L62 and/or L67 slightly, as necessary to center bandwidth.

u. Remove 606A and 390-ohm resistor from junction of C61 and C62.

v. Connect 606A to pin 2.

w. Set 606A to 3.0 Mc at 60 mv.

x. Connect 3.5 Mc, 50 mv signal to Pin 1 from Sweep Generator.

y. Connect 24 Mc, 1V signal to Pin 6.

z. Sweep signal at Pin 1 from 2.5 Mc to 4.5 Mc. The bandwidth (-3 db points referred from 3.5 Mc input) should be at least 1.2 Mc apart and centered on 3.5 Mc. L61 should be readjusted, if necessary, to improve centering. Level at band center should be more than 120 mv rms.

aa. Connect "T" with 50-ohm load to 411A input.

ab. Connect 411A to Pin 5 (30-31 Mc output, 150 mv level).

ac. Set signal at Pin 1 to 3.5 Mc, 50 mv.

ad. Adjust R64 to set output level to 150 mv.

ae. Sweep Pin 1 signal between 2.5 Mc and 4.5 Mc. Level between 3.0 Mc and 4.0 Mc should not vary more than 0.5 db. If level varies more than 0.5 db, retune L68 with Pin 1 signal at 3.5 Mc, and reset R64 for 150 mv output. Then repeat the check in this paragraph.

5-60. MULTIPLIERS A13-A18.

5-61. NORMAL OPERATION. Input frequencies are 33 Mc, 35 Mc, 37 Mc, 38 Mc, and 39 Mc at levels of about 90 mv. Output frequencies are 350 Mc, 360 Mc, 370 Mc, 380 Mc, and 390 Mc at 1.5 volts and 330 Mc at 1.2 volts. The "on/off" ratio of A13 thru A17 is greater than 75 db.

5-62. OPERATION CHECK. To quickly check to see if the multipliers are operating properly, proceed as follows:

a. For example, if Multiplier A13 is being checked, swing out UHF deck as indicated in Paragraph 5-16.

b. Disconnect 39 Mc cable to A13 input (see Figure 5-9) and connect 39 Mc from an Φ 5110A.

c. Punch the "0" button in the most significant column (the first column from the left on the front panel of the 5100A). This applies control voltage to Multiplier A13.

d. Disconnect cable marked "390 Mc" which connects FL1 to 350 to 390 Switch A20. Connect Electronic Counter and RF Millivoltmeter to output of FL1.

e. Frequency should be 390 Mc at 300 mv \pm 50 mv.

f. Multipliers A14-A18 may be checked in a similar manner, using appropriate input frequencies and front panel pushbuttons. A18 is always on so a front panel button need not be pushed to supply it with power. Connect 3 db pad (Φ 355C) in 39 Mc cable between Φ 5110A and Φ 5100A. Output from A13 should drop no more than 2 db. Check other Multipliers in a similar manner.

5-63. ADJUSTMENTS. If Multiplier adjustments are necessary, proceed as follows:

Note

The output voltage level of the UHF Multipliers A13 to A17 is adjusted to 350 mv \pm 1 db. Multiplier A18 output is adjusted to 420 mv \pm 1 db. Before making any adjustments, check output voltage level of all Multipliers to find average level with Φ 411A. Only adjust output voltage level on Multipliers which are more than \pm 1 db from the average level. Use the average level as the true voltage for the Φ 411A if the accuracy of the Φ 411A is unknown. (See step h.)

a. Remove Multiplier Module from UHF swing-out deck. This will require removing two screws, disconnecting input cable and output Filter, and unsoldering +6.3 volt, -12.6 volt, and -12.6 volt control leads (except for A18 which has no -12.6 volt control).

b. Once the Module is on the bench with tuning holes exposed, reconnect and resolder all connections.

c. If the Module that is being adjusted is A13, punch the "0" pushbutton in the 10^7 column on front panel of 5100A. This applies -12.6 volt control voltage to A13 and turns the Multiplier circuits on.

d. Remove cable marked "390 Mc" which connects output of FL1 and 350 to 390 Mc Switch A20 (see Figure 5-9).

e. Connect RF Millivoltmeter with Tee Probe (Φ 11024A) and a 50 ohm termination (Φ 908A) to output of FL1.

f. Use drop of acetone to loosen slug in L8 (see Figure 5-19) and tune for maximum.

g. Tune L2, C9, C18, C24, and C25 in this order for maximum output.

i. Remove -12.6 volt control from Multiplier A13 by returning "0" pushbutton in 10^7 column to its original position. Output reading should drop to zero.

h. R15 can be adjusted if output voltage level of one Multiplier is more than \pm 1 db from the average value. The db scale on the Φ 411A will indicate 350 mv is +4 db and 420 mv is +6 db. A 2 db difference in voltage level between A18 and the average of the other 5 Multipliers can be used to set a reference for all 6 Multipliers.

5-64. 30 TO 39 MC SWITCH MODULE A19.

5-65. NORMAL OPERATION. The 30 to 39 Mc Switch Module contains 10 diode switch matrices, corresponding to the 10 front panel pushbuttons in the 10^6 column. One switch matrix is turned "on" by applying a -12.6 volt enabling voltage from a LOCAL or REMOTE source as selected by the front panel FREQUENCY SELECTION switch. Each pushbutton in the 10^6 column represents an input and an output from A19. Insertion loss of the switch matrices is typically less than 3 db, and the "on/off" ratio greater than 108 db.

5-66. OPERATIONAL CHECKS. On-off switching action and switching time of the 30 to 39 Mc Switch Assemblies are tested using the procedures of Item 2 of the In-cabinet Performance Check, Table 5-2. The test below for insertion loss may be helpful in checking for a switch with marginal performance.

5-67. Insertion loss is the measure of switch conduction when the switch is "on", comparing the output signal to the input signal, with the input signal as 0 db reference.

5-68. The inputs to the 30 to 39 Mc Switch Module are J1 thru J10, corresponding to the pushbuttons in the 10^6 column. Output of the 30 to 39 Mc Switch is J18. J11 through J15, and J17 are 100 ohm outputs to the Multipliers.

5-69. To measure insertion loss, connect the input of the desired switch through a BNC "T". Connect another BNC "T" to J18. Load appropriate output to Multiplier with 100 ohms. Using the appropriate front panel pushbutton or remote programming, turn the switch "on". Measure the input on an Φ 411A RF Millivoltmeter (use db scale). Measure the output with the RF Millivoltmeter. The difference in db readings is the insertion loss of that switch matrix. Insertion loss is normally 1.6 db, \pm 1 db.

5-70. 350 TO 390 MC SWITCH A20.

5-71. NORMAL OPERATION. The 350 to 390 Mc Switch contains 5 diode switches, corresponding to the 5 front panel pushbuttons in the 10⁷ column. One diode switch is turned "on" by applying a -12.6 volt enabling voltage from a LOCAL or REMOTE source as selected by the front panel FREQUENCY SELECTION switch. Each pushbutton in the 10⁷ column represents an input and output from A20. Insertion loss of the switches is typically less than 1 db, and the "on/off" ratio greater than 25 db.

5-72. OPERATIONAL CHECKS. On-off switching action and switching time of the 350 to 390 Mc Switch are tested using the procedure of Item 2 of the In-cabinet Performance Check, Table 5-2. The test below for insertion loss may be helpful in checking for a switch with marginal performance.

5-73. Insertion loss is the measure of switch conduction when the switch is "on", comparing the output signal to the input signal, with the input signal as 0 db reference.

5-74. The inputs to the 350 to 390 Mc Switch Module are J1 thru J5, corresponding to the pushbuttons in the 10⁷ column. Output of the 350 to 390 Mc switch is J6.

5-75. To measure insertion loss, swing out UHF deck (see Figure 5-9) and connect the input of the desired switch through a BNC "T". Connect another BNC "T" to J6. Using the appropriate front panel pushbutton, or remote programming, turn the switch "on". Measure the input with an $\frac{1}{2}$ 411A RF Millivoltmeter (use db scale). Measure the output with the RF Millivoltmeter. The difference in db readings is the insertion loss of that diode switch. Insertion is normally less than 1 db.

5-76. 1ST UHF MIXER A21.

5-77. NORMAL OPERATION. Inputs are 330 Mc at 420 mv from FL6, and 30 to 31 Mc at 100-165 mv from Mixer/Filter A12 through Connector Block A4. Output is 360 to 361 Mc at 450 mv.

5-78. OPERATIONAL CHECK. The 1st UHF Mixer is indirectly checked by proper operation of the 5100A in the In-Cabinet Performance Check, Table 5-2.

5-79. ADJUSTMENTS. If adjustments to the 1st UHF Mixer are necessary, proceed as follows:

Note

Adjustments in the Mixer are extremely critical, particularly the adjustment of R3 which adjusts the bias on the Mixer diodes CR1 and CR2. A misadjustment here will cause spurious signals to exist on the output frequencies of the 5100A.

a. Connect 330 Mc from FL6 to J2.

b. Connect a Sweep Signal Generator with output on -12 db and centered around 30.5 Mc to J1.

c. Connect a BNC "T" to output of Filter FL7.

d. Monitor output signal with a 185B Sampling Oscilloscope.

e. Sweep input signal between 30 and 31 Mc.

f. A2C1, A2C4, and A2C6 are adjusted for maximum output.

g. A1C2 and A1C7 are adjusted to provide equal amplitude of response curve at 360 and 361 Mc.

h. A2C6 is also adjusted to provide equal band-edges.

i. A1R3 is adjusted to -2.2 volts at the junction of A1C4 and A1R7.

5-80. 2ND UHF MIXER A22.

5-81. NORMAL OPERATION. Inputs are 360 to 361 Mc at 250 to 350 mv from FL7, 30 to 39 Mc at 90 mv from A19, and Automatic Gain Control from A24. Output is 390 to 400 Mc at 410 mv.

5-82. OPERATIONAL CHECK. The 2nd UHF Mixer is indirectly checked by proper operation of the 5100A in the In-Cabinet Performance Check, Table 5-2.

5-83. ADJUSTMENTS. If adjustments to the 2nd UHF Mixer are necessary, proceed as follows:

Note

Adjustments in the Mixer are extremely critical, particularly adjustment of R8 which adjusts bias on Mixer diodes CR1 and CR2. Misadjustment here will cause spurious signals to the output frequencies of the 5100A.

a. Connect 360 to 361 Mc from FL7 to J2.

b. Connect a Sweep Signal Generator with output on -12 db and centered around 35 Mc to J1.

c. Connect a BNC "T" to output of Filter FL8.

d. Monitor output signal with a 185B Sampling Oscilloscope.

e. Sweep input signal between 30 and 35 Mc.

f. A2C1, A2C4, A2C6, and A2C9 are stagger tuned to provide equal amplitude over the band.

g. A1L3 and A1L5 are adjusted to provide equal amplitude at band edges 390 and 400 Mc.

h. A2C9 is also adjusted to provide equal amplitude at 390 and 400 Mc.

i. A1R8 is adjusted to -1.8 volts at the junction of A1R11 and A1C7.

5-84. The following procedure is recommended as a performance check after the instrument has been in the field for a long time or whenever the 2nd UHF Mixer is replaced.

a. Disconnect AGC lead to 2nd Mixer and connect a 6200 ohm, 5%", 1/2W resistor (clips on each lead) between the AGC terminal and the +6.3V terminal. This resistor will set the AGC current to about 1 ma.

b. Connect a 2 db pad ($\frac{1}{2}$ 355C) in 360-361 Mc cable between FL7 360 Mc Filter and J2 of 2nd Mixer.

c. Connect a 3 db pad ($\frac{1}{2}$ 355C) in 30 Mc cable between $\frac{1}{2}$ 5100A and $\frac{1}{2}$ 5110A. Connect another 3 db pad in 39 Mc cable between $\frac{1}{2}$ 5100A and $\frac{1}{2}$ 5110A.

d. Connect an $\frac{1}{2}$ 411A with Tee Probe ($\frac{1}{2}$ 11024A) and a 50-ohm termination ($\frac{1}{2}$ 908A) to the output of FL8 395 Mc Filter.

e. Using a plastic tuning wand adjust 2nd Mixer output tuning C9 to make output equal and maximized for two frequencies of 40,000,000.00 and 49,000,000.00 cps. The output from 395 Mc Filter should be greater than 55 mv.

f. Remove pads and current setting resistor and restore to normal. Solder AGC lead and replace plug on C9 adjustment hole.

5-85. 3RD UHF MIXER A23.

5-86. NORMAL OPERATION. Inputs are 390 to 400 Mc at 55 mv from FL8, and 350 to 390 Mc at 350 mv from A20. Output is 0 to 50 Mc greater than 30 mv.

5-87. OPERATIONAL CHECK. The 3rd UHF Mixer is indirectly checked by proper operation of the 5100A in the In-Cabinet Performance Check, Table 5-2.

5-88. OUTPUT AMPLIFIER A24.

5-89. NORMAL OPERATION. Inputs are 0 to 50 Mc at 55 mv from A23, and three AND gate control voltages from the "0" pushbuttons in the 10^5 , 10^6 , and 10^7 columns on front panel of 5100A. Outputs are 0 to 50 cps greater than 55 mv, signal for CIRCUIT CHECK meter, 50 cps to 50 Mc at 1 volt, and Automatic Gain Control to 2nd UHF Mixer A22.

5-90. OPERATIONAL CHECK. The output Amplifier circuits are checked indirectly by proper operation of the 5100A in the In-cabinet Performance Check, Table 5-2.

5-91. ADJUSTMENTS. The following procedure is recommended when an In-cabinet Performance Check indicates the Amplifier A24 requires adjustment or whenever the Amplifier is replaced.

a. Set pushbuttons for a frequency of 00,099,000.00 cps.

b. Check dc voltage level at LO LEVEL OUTPUT jack on rear panel. If voltage level is greater than ± 2 mv, then adjust R1 (DC ADJ LO LEVEL OUTPUT on A24) to obtain a dc voltage level of 0V ± 2 mv.

c. Connect $\frac{1}{2}$ 411A with Tee Probe and 50 ohm termination to OUTPUT jack on front panel.

d. Check output voltage at frequencies of 500 Kc and 49 Mc. Adjust OUTPUT LEVEL R56 to obtain an output reading within 1V ± 1 db at 500 kc and 49 Mc. Take calibration of $\frac{1}{2}$ 411A into account.

e. Check output voltage level for 99 kc and 100 kc. Adjust R61 OUTPUT LEVEL MANUAL OPERATION control to obtain same output voltage for both frequencies. NOTE: 100 kc is below lower limit of $\frac{1}{2}$ 411A, since the fixed gain of the amplifier below 100 kc is being adjusted to be the same as at 100 kc.

f. Check the AGC amplifier section of A24 by selecting a frequency of 100 kc and inserting a 10 db pad ($\frac{1}{2}$ 355C) between the output of FL8 395 Mc Filter (output of 2nd UHF Mixer A22) and input to 3rd UHF Mixer A23. Output voltage should be down less than 1 db.

5-92. POWER SUPPLY A25.

5-93. NORMAL OPERATION. The Power Supply furnishes +6.3 volts ± 100 mv, and -12.6 volts, ± 200 mv, to all circuits in the $\frac{1}{2}$ 5100A.

5-94. OPERATIONAL CHECK. The Power Supply circuits are checked indirectly by proper operation of the 5100A in the In-cabinet Performance Checks, Table 5-2.

5-95. ADJUSTMENTS. If adjustments to the Power Supply are necessary, proceed as follows:

a. Remove bottom cover and three screws at rear of instrument. Release captive screws to swing UHF deck out.

b. Connect $\frac{1}{2}$ 740A DC Voltmeter to the -12.6V terminal (violet wire) on the bottom of the Search Oscillator Module A2. Voltmeter should read -12.600V dc, ± 200 mv. If voltage is outside this range, adjust R14. Since R14 is a wire-wound resistor, discrete voltage steps of approximately 6 mv will be observed. Adjust R14 to a stable setting on one of these steps within ± 10 mv of the required voltage.

c. Connect Voltmeter to the +6.3V terminal (red wire) on bottom of the Search Oscillator Module A2. Voltmeter should read +6.300V dc ± 100 mv. If voltage is outside this range, adjust R12. Discrete voltage steps will be observed as R14 is adjusted so leave the control set on a stable step within ± 10 mv of the required voltage. The +6.3V dc supply uses the -12.6 vdc supply as a reference and so it should be adjusted after the -12.6V dc supply.

d. Vary the line voltage quickly from 103 to 127V dc (207 to 255V dc). The instantaneous change in +6.3V dc or -12.6V dc should be less than 100 microvolts. The $\frac{1}{2}$ 740A DC Standard/Differential Voltmeter is an ideal instrument for this measurement.

e. The measurement of 60 and 120 cps ripple on the two supplies requires a special amplifier (30 db, 50 to 150 cps, noise referred to input less than 1 microvolt) and an $\frac{1}{2}$ 302A Wave Analyzer. Ripple is under 10 microvolt rms. However, ground loops between the Synthesizer and the measuring equipment will usually make this voltage level difficult to measure. Should this measurement be attempted, bear in mind that a high ripple voltage will most likely be caused by the method and equipment used, rather than the power supply.

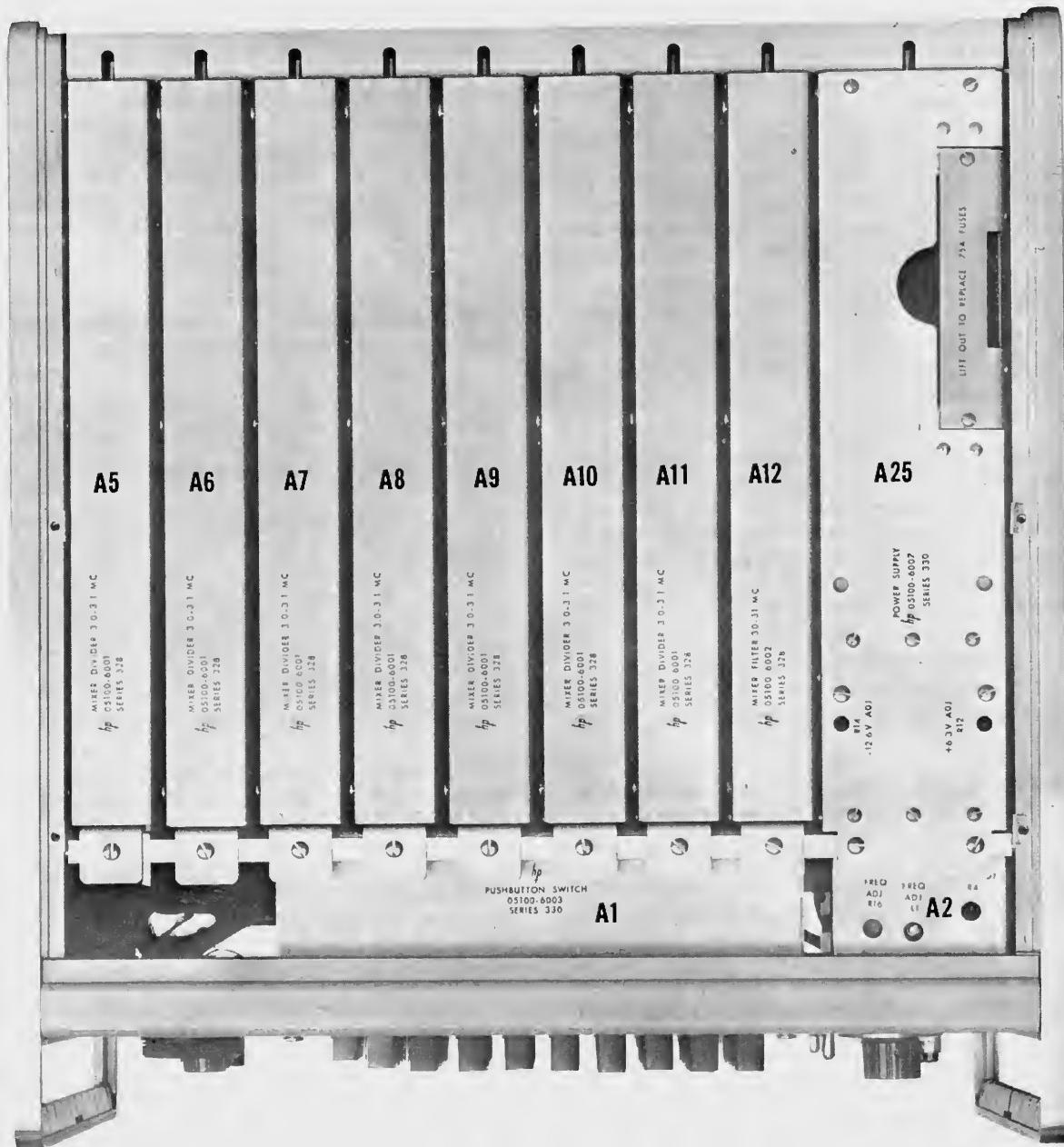


Figure 5-7. Component Location - Top View

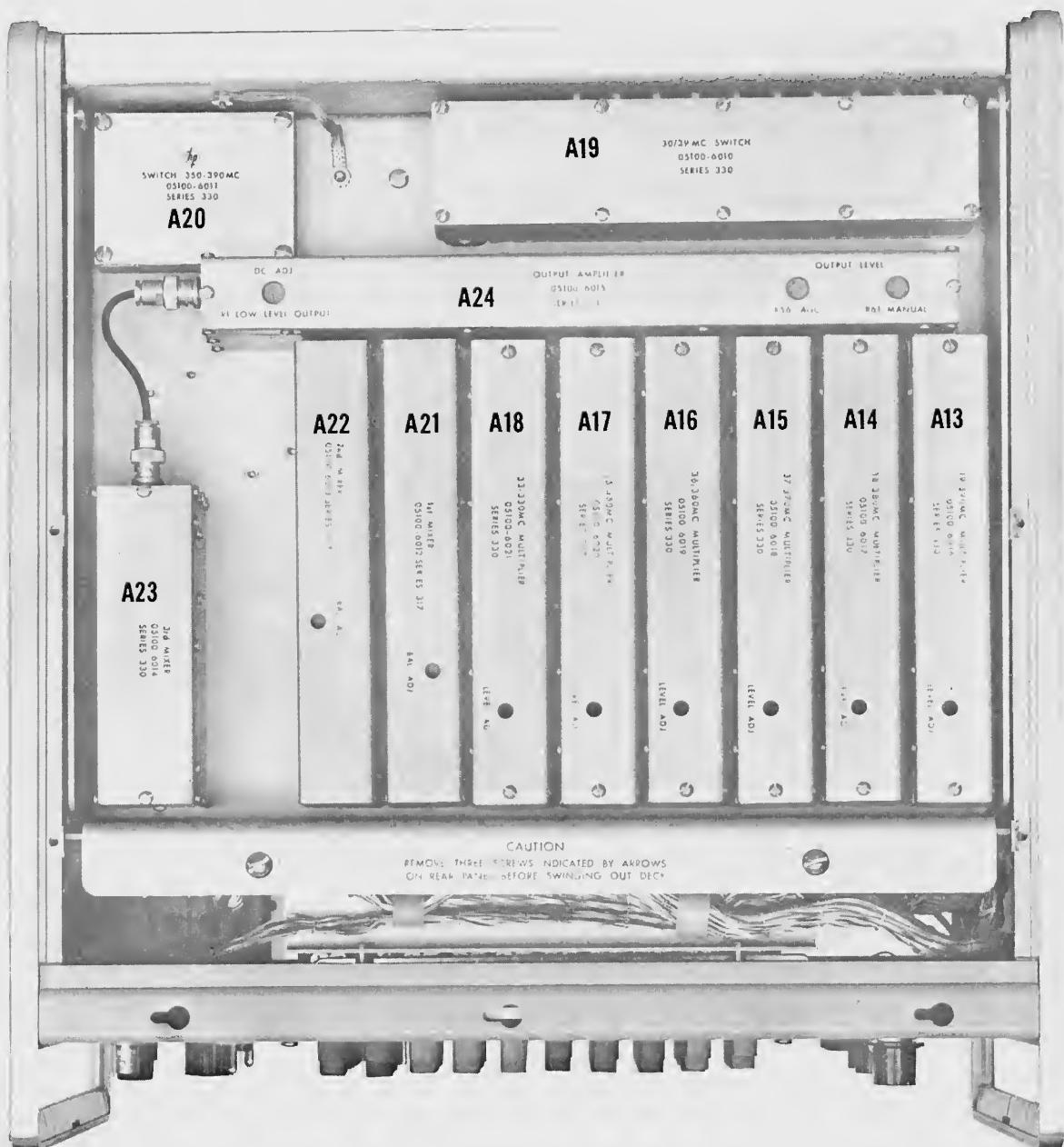


Figure 5-8. Component Location - Bottom View

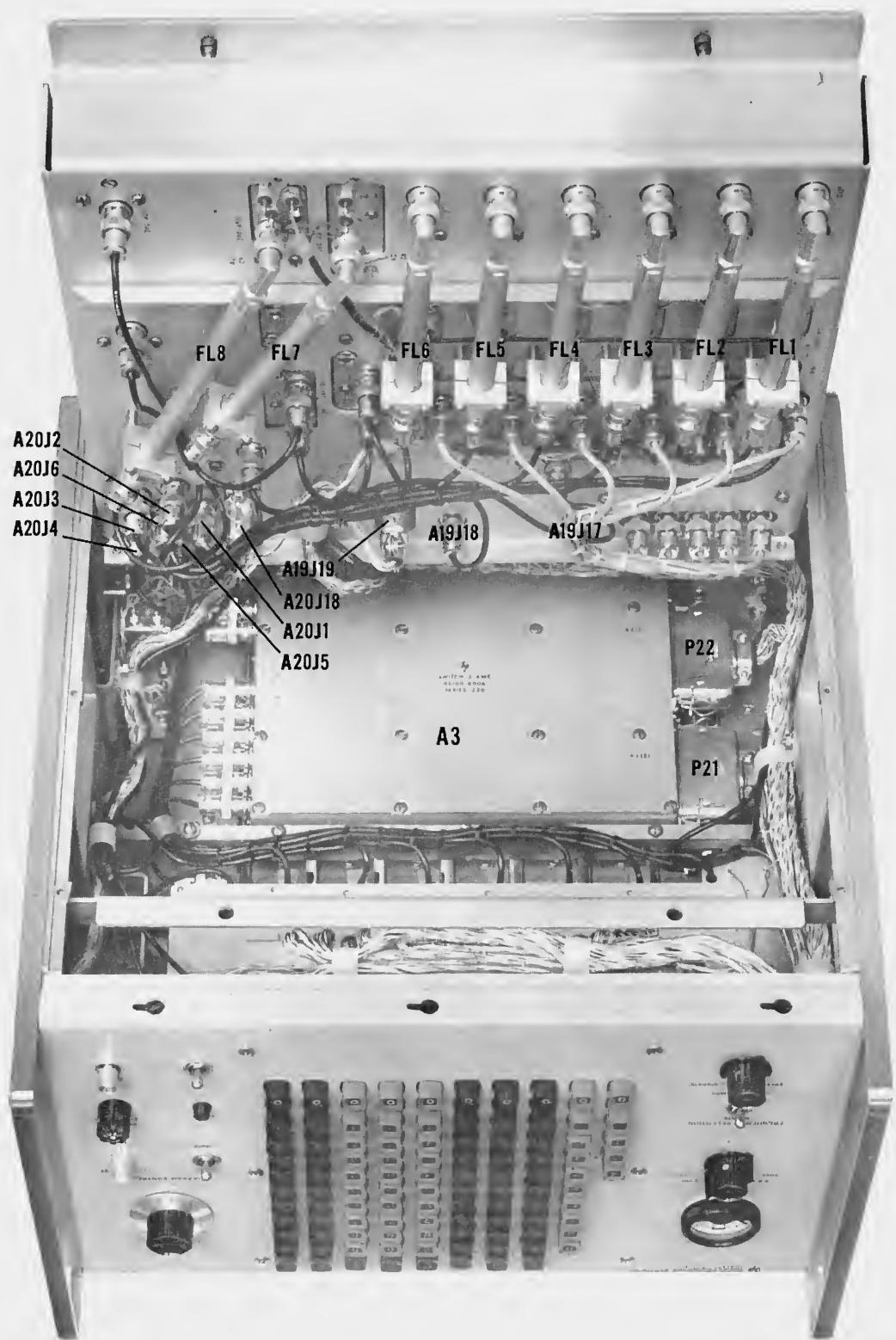


Figure 5-9. Component Location - UHF Deck Swung Out

PERFORMANCE CHECK TEST CARD

Hewlett-Packard Model 5100A

Tested by _____

Serial Prefix No. _____ - _____

Date _____

| Description | Check |
|--|---|
| 1. Output frequencies Dc to 50 Mc | <input type="checkbox"/> |
| 2. Digital Frequency Selection 0.01 cps through 10 Mc per step | <input type="checkbox"/> |
| 3. Output Voltage Dc to 100 Kc >15 mv rms open circuit 50 cps to 100 kc, 1 volt rms + 2 db - 4 db 100 kc to 50 Mc, 1 volt rms ± 1 db | Lo Level Output <input type="checkbox"/> mv -4 db <input type="checkbox"/> + 2 db -1 db <input type="checkbox"/> + 1 db |
| 4. Search Oscillator Continuously variable 0.1 cps thru 1 Mc Linearity ± 5% | Manual <input type="checkbox"/> Ext -1 to -11V <input type="checkbox"/> Linearity -5% <input type="checkbox"/> +5% |
| 5. Signal-to-Phase Noise Ratio >54 db in a 30-kc band | <input type="checkbox"/> >54 db |
| 6. Signal-to-Am Noise Ratio >74 db in a 30 kc band above 100 kc | <input type="checkbox"/> >74 db |
| 7. RMS fraction frequency deviations | <input type="checkbox"/> See Table 5-2 |
| 8. Spurious signals non-harmonically related signals below selected frequency > 90 db | <input type="checkbox"/> >90 db |
| 9. Harmonic signals 30 db below selected frequency | <input type="checkbox"/> >30 db |

| SYMBOLS | | SWITCH DESIGNATIONS | |
|-----------------------------|---|---------------------|---|
| | FRONT PANEL | | |
| | REAR PANEL | | |
| | KNOB CONTROL | | |
| | SCREWDRIVER ADJUST | | |
| | MAIN SIGNAL PATH | | |
| | FEEDBACK PATH | | |
| | CONDUCTING ELEMENT | | |
| | WIPER MOVES TOWARD "CW" WHEN CONTROL IS ROTATED CLOCKWISE | | |
| | POWER LINE GROUND | B | 2ND WAFER FROM FRONT (A=1ST, ETC) |
| | CIRCUIT COMMON GROUND | | |
| | TEST POINT | R | REAR OF WAFER (F=FRONT) |
| | "AND" GATE | | |
| | INHIBIT GATE | | |
| | "OR" GATE | | (2-1/2) TERMINAL LOCATION (2½) (VIEWED FROM FRONT) |
| WAVEFORMS SHOWN ARE TYPICAL | | | |

REFERENCE DESIGNATIONS

REFERENCE DESIGNATIONS WITHIN ASSEMBLIES ARE ABBREVIATED.
ADD ASSEMBLY NUMBER TO ABBREVIATION FOR COMPLETE DESCRIPTION.

| ASSEMBLY | ABBREVIATION | COMPLETE DESCRIPTION |
|-----------|--------------|----------------------|
| A25 | C1 | A25C1 |
| A25A1 | CR1 | A25A1CR1 |
| NO PREFIX | J3 | J3 |

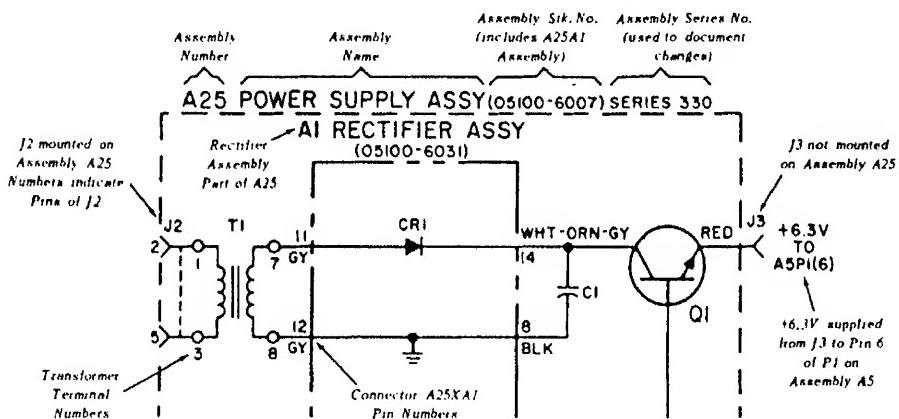
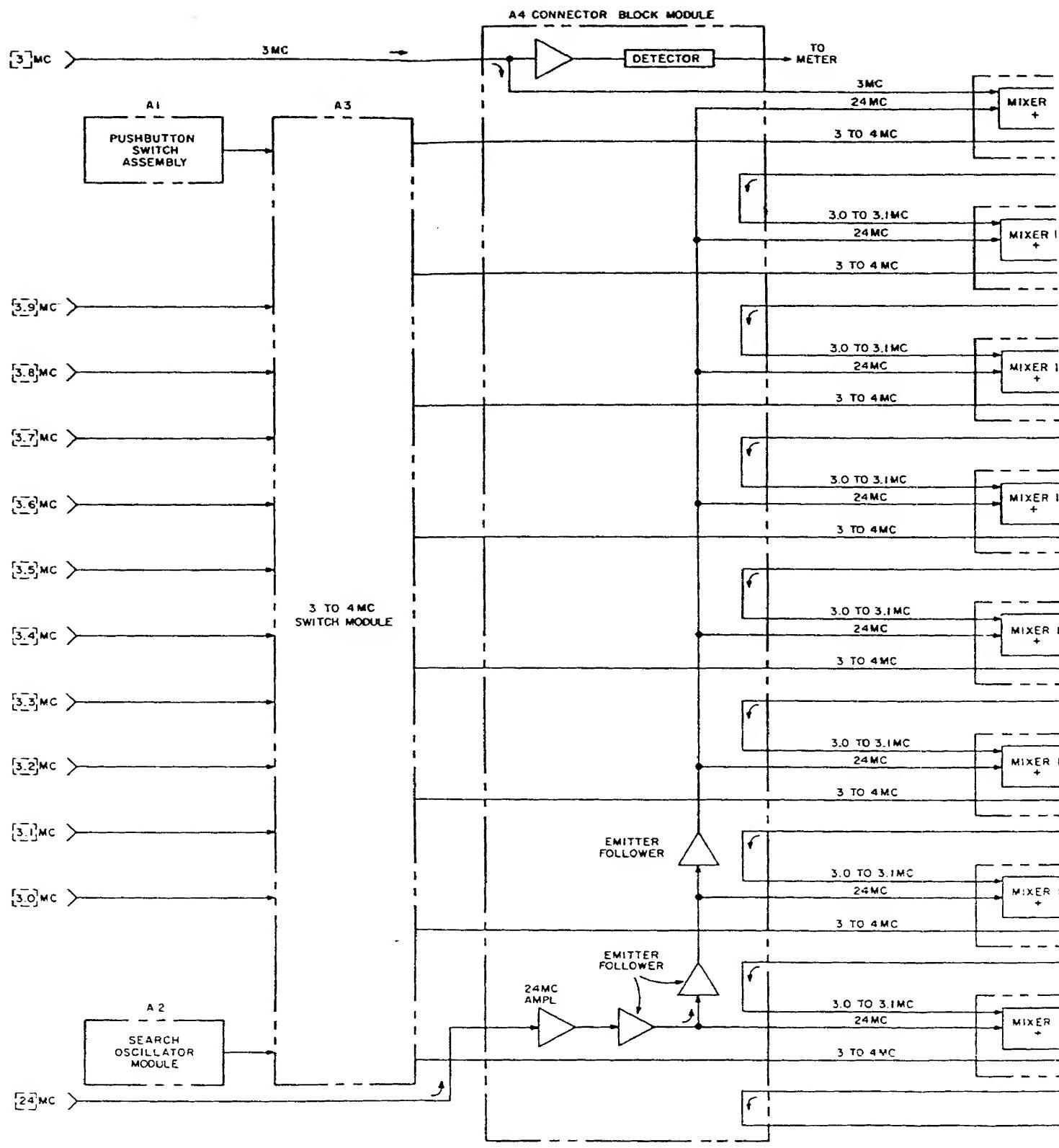


Figure 5-10. Schematic Diagram Notes



VHF SECTION

Section V
Figures 5-10 & 5-11

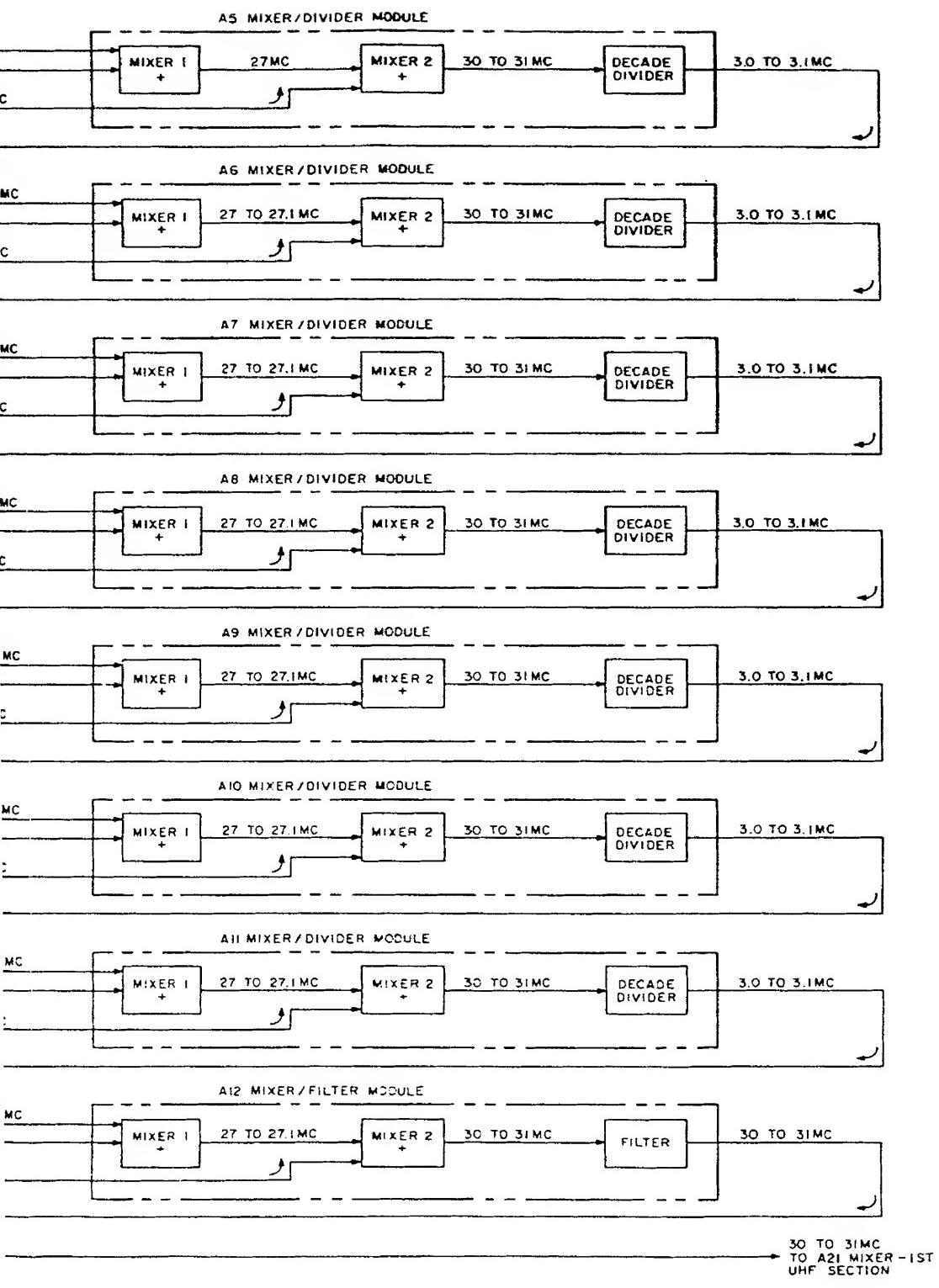
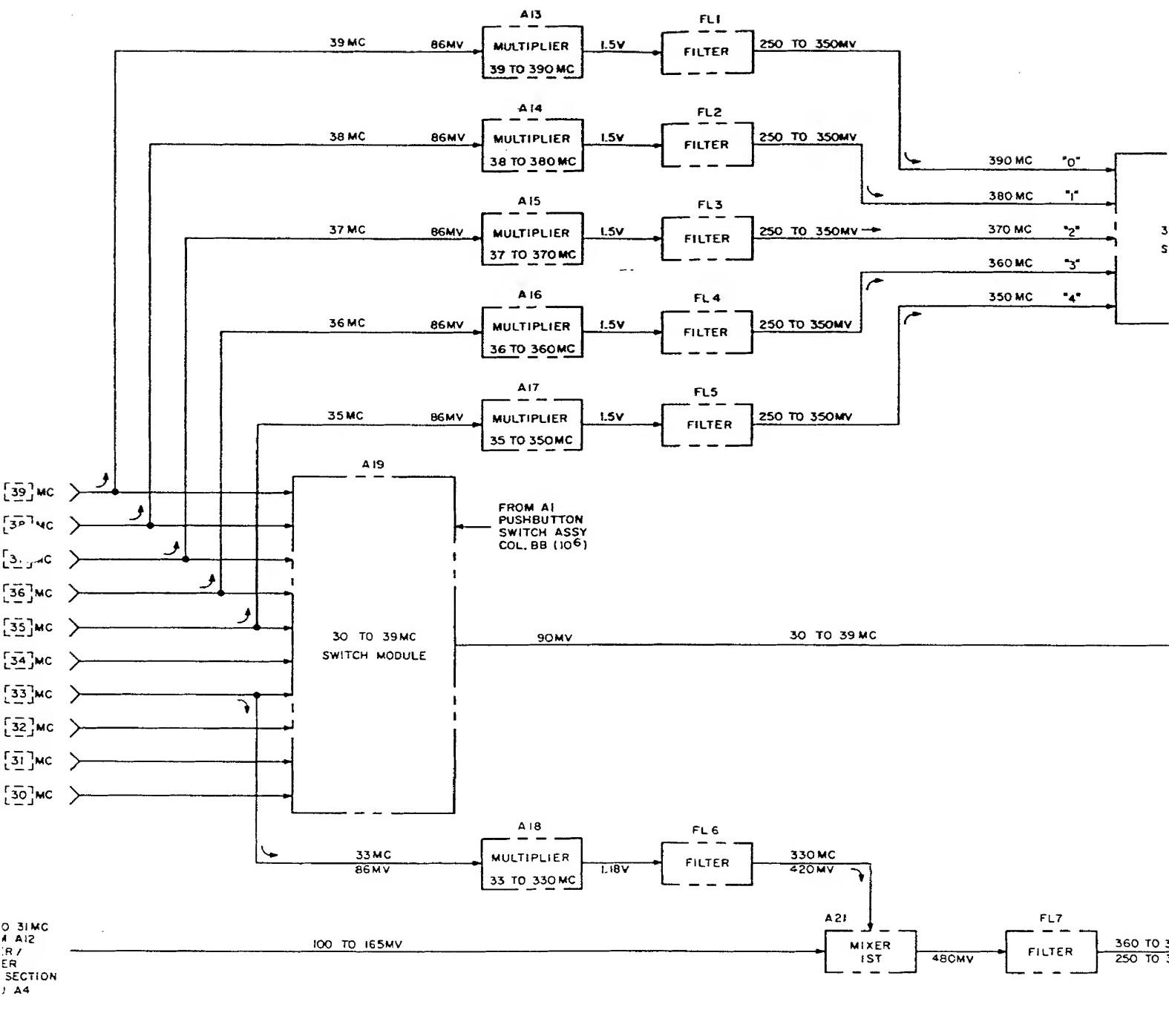


Figure 5-11. Block Diagram, HF Section
5-25/5-26

05100-D-26



Section
Figure 5-

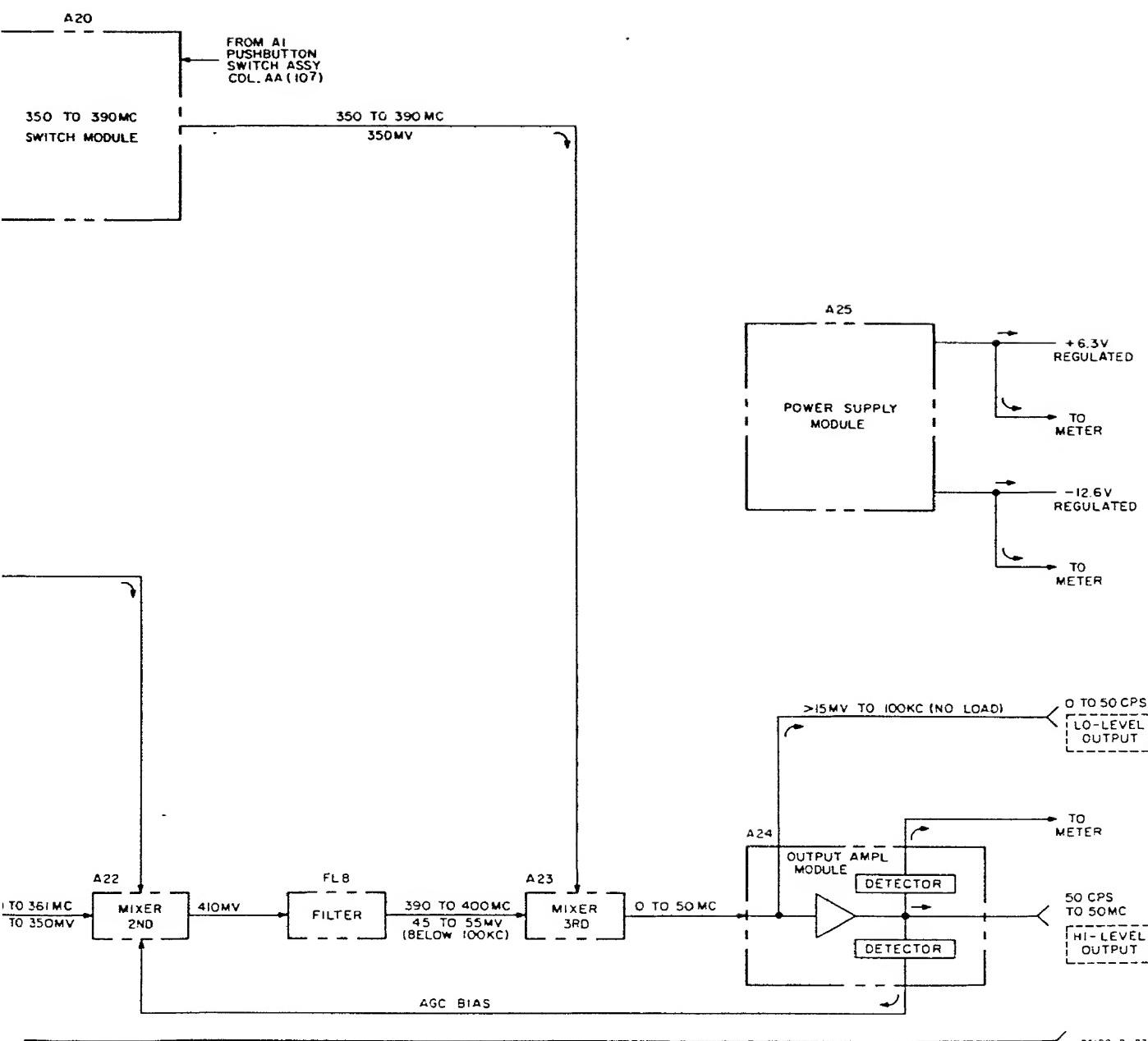


Figure 5-12. Block Diagram, UHF Secti

| AI | | | | | | | | | | |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|-----|
| KILOCYCLES | | | | | CYCLES | | | | | ROW |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AA | BB | CC | DD | EE | FF | GG | HH | JJ | KK | |
| 10 ⁷ | 10 ⁶ | 10 ⁵ | 10 ⁴ | 10 ³ | 10 ² | 10 ¹ | 10 ⁰ | 10 ⁻¹ | 10 ⁻² | |

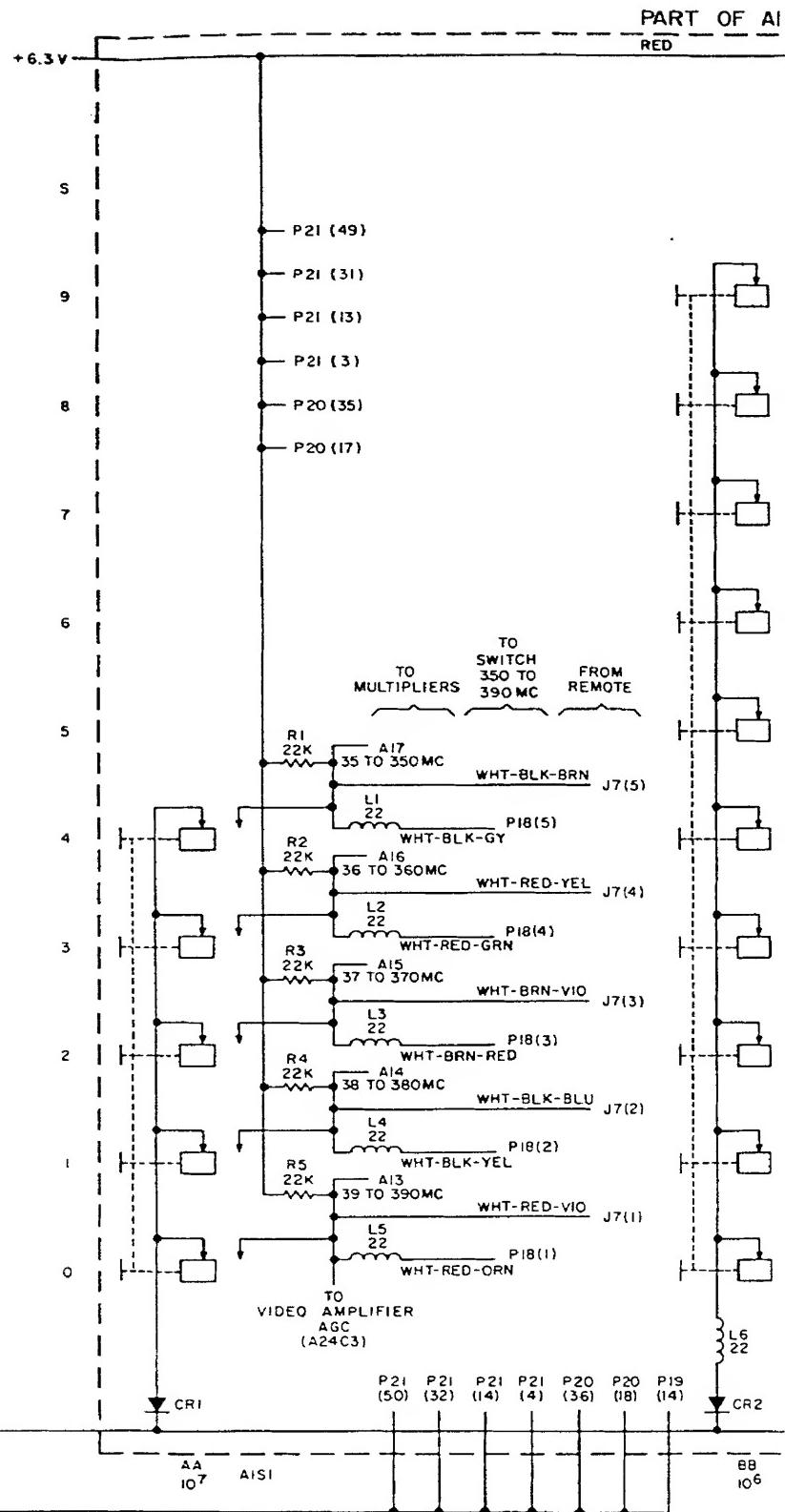
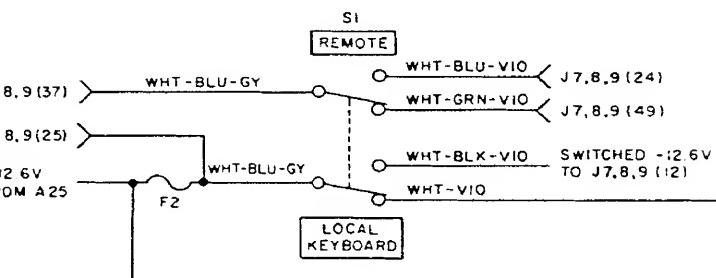
NOTES

- UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATIONS

| NO PREFIX | AI |
|-----------|--------------------|
| F2 | C1 CRI-10 |
| SI | LI - 14 RI - 15 |

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OF AI PUSHBUTTON SWITCH ASSEMBLY 105100-6003

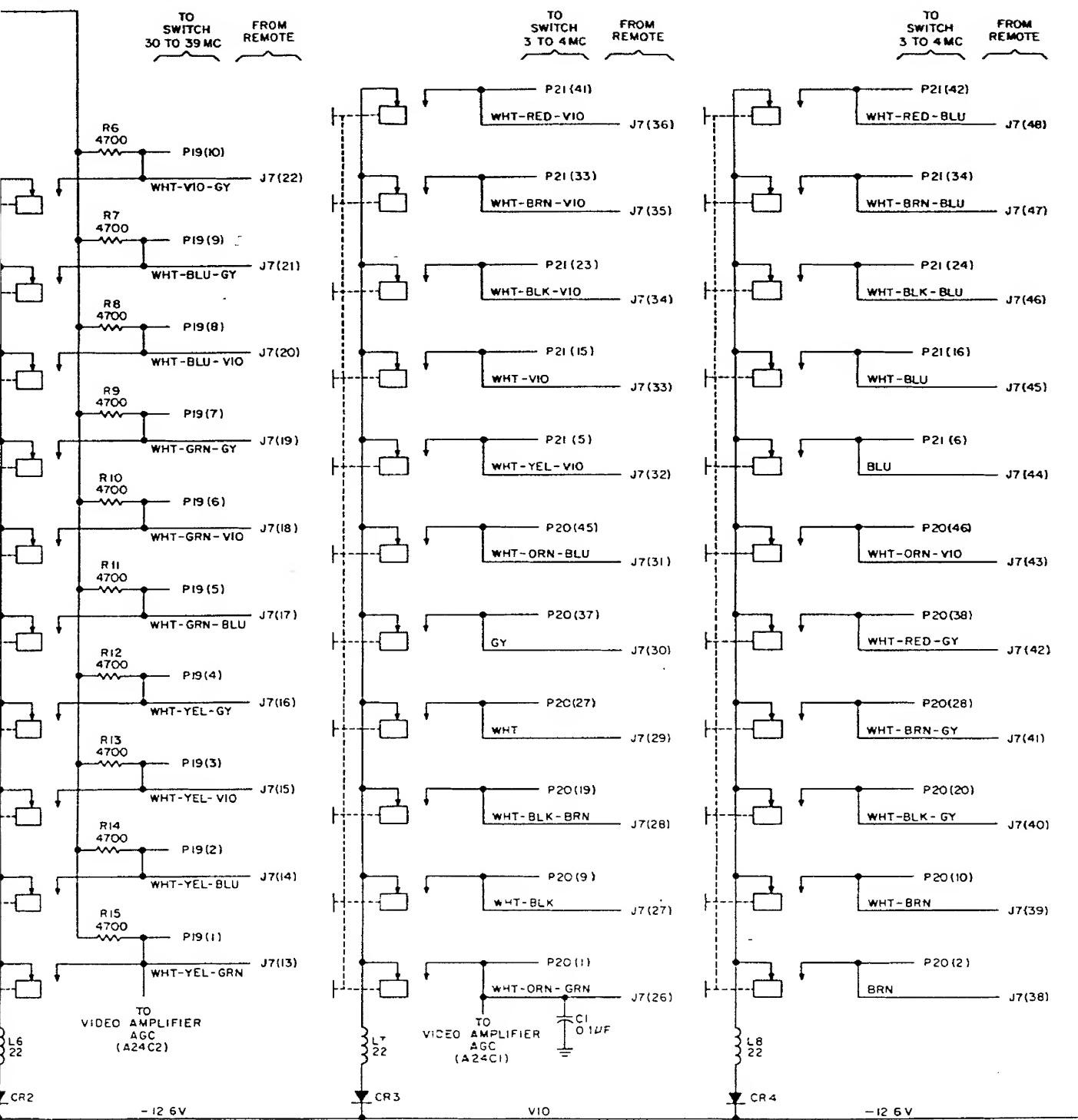
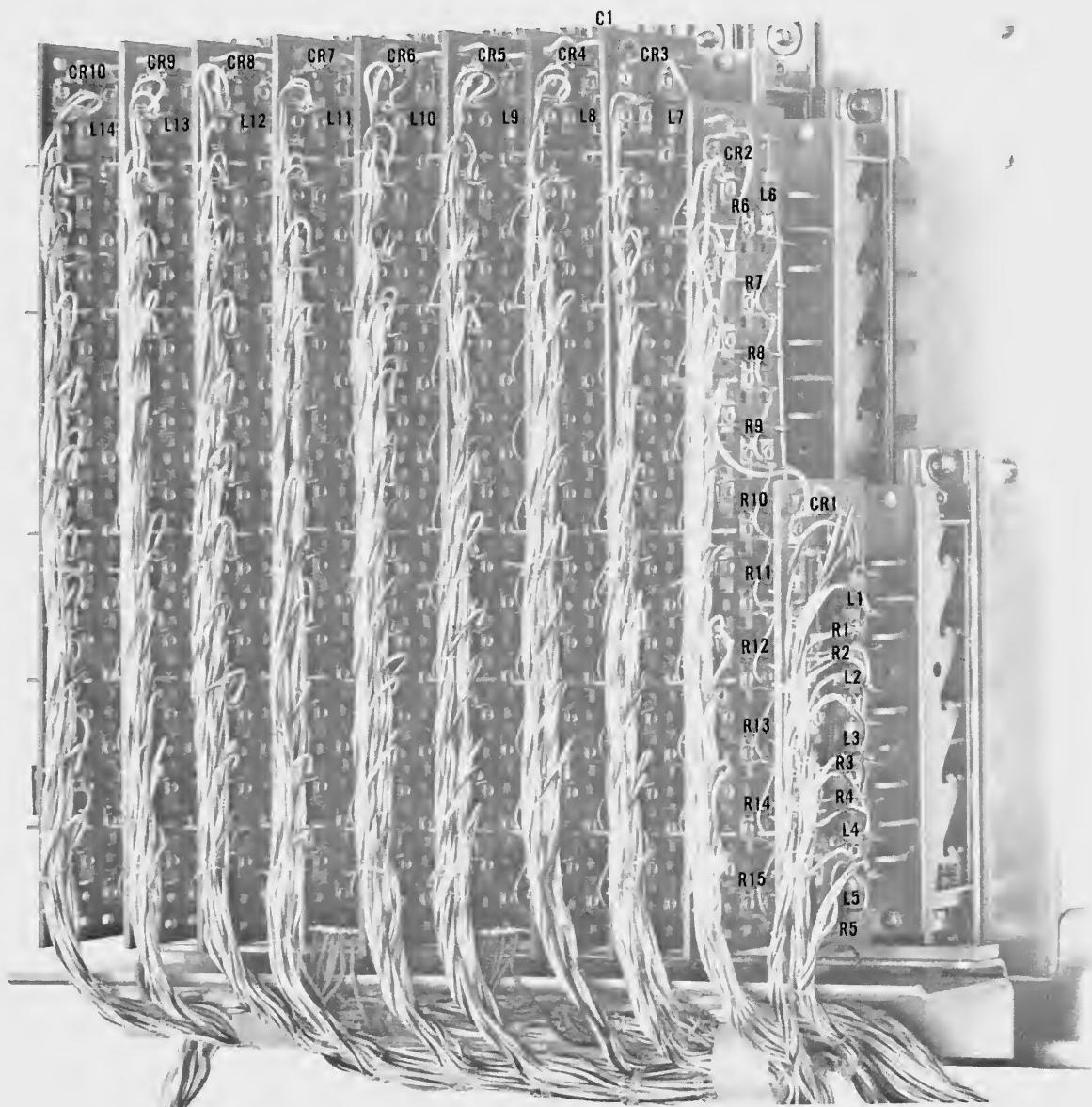
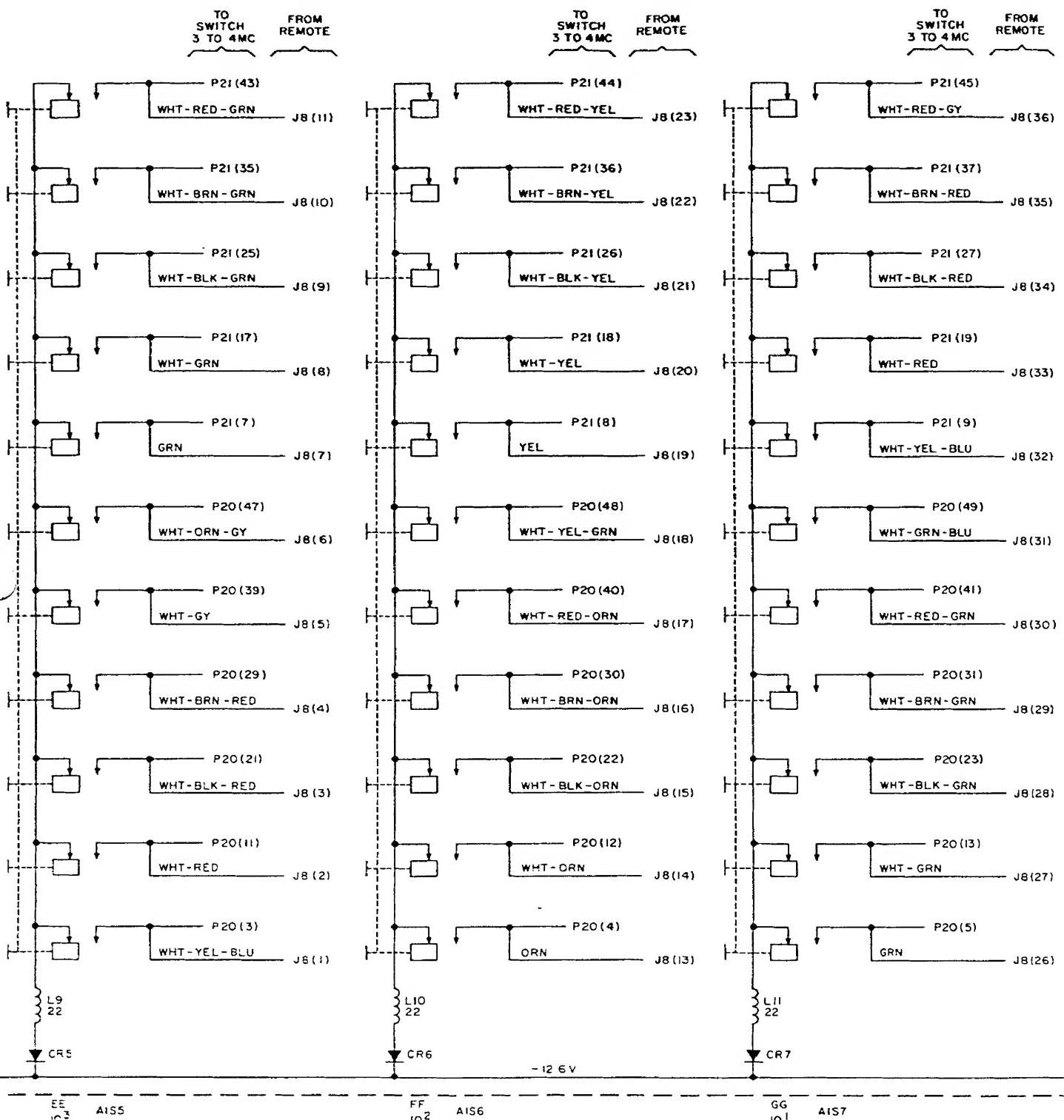


Figure 5-13. Pushbutton Switch A1 (Sheet 1 of 5)



A1

PART OF AI PUSHBUTTON SWITCH ASSEMBLY (05100-6003) (SERIES 330)



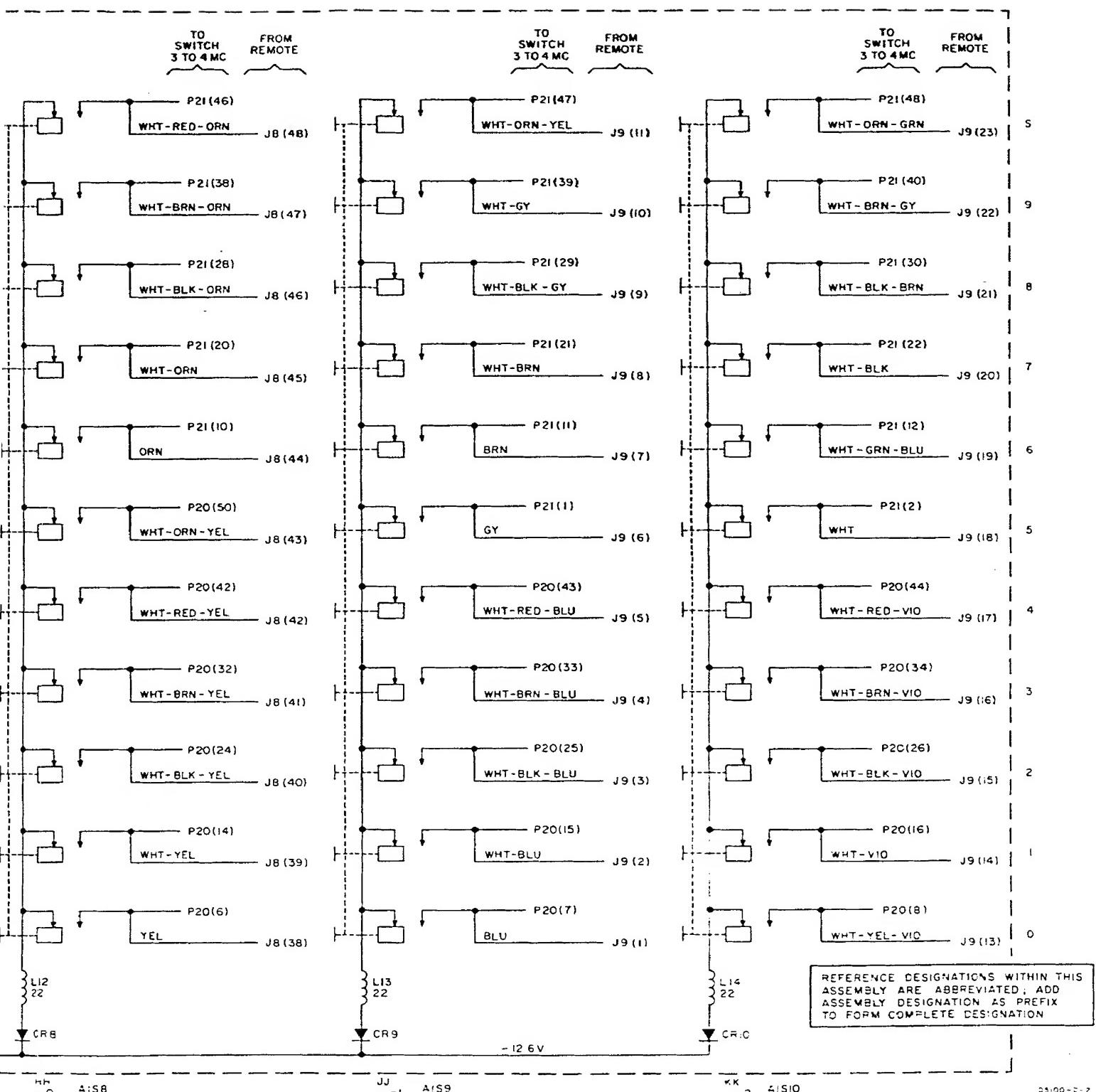
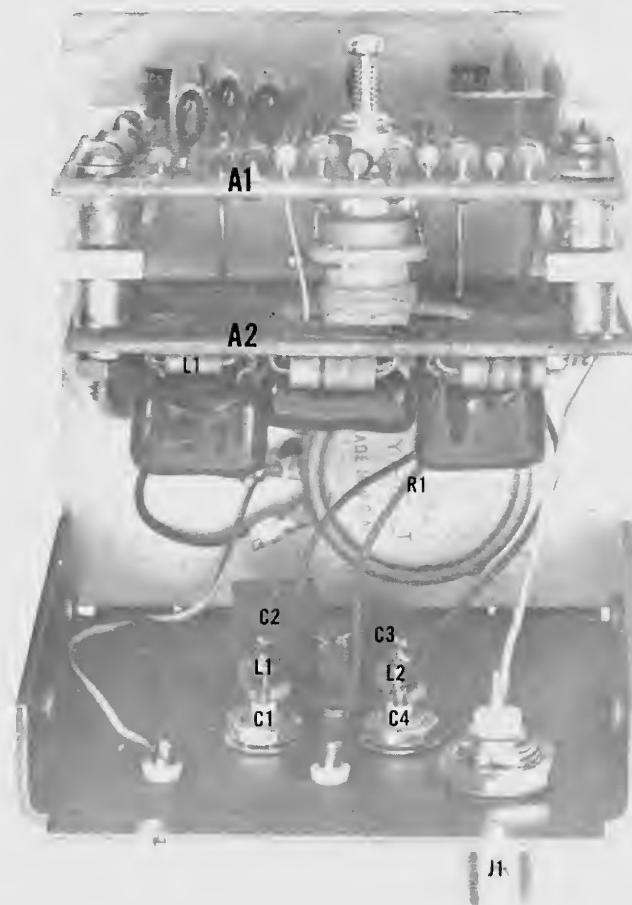
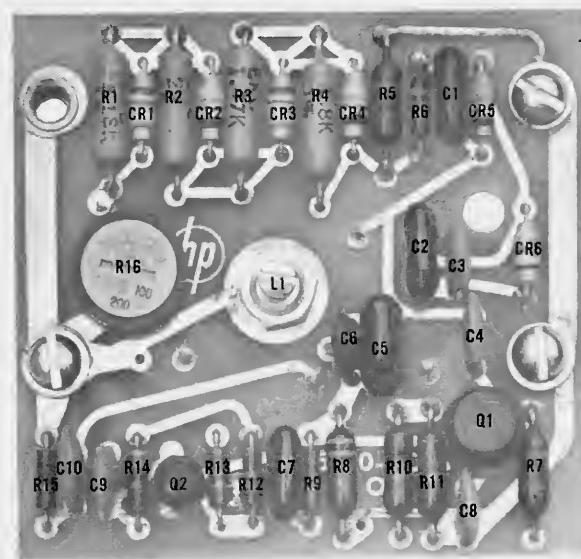


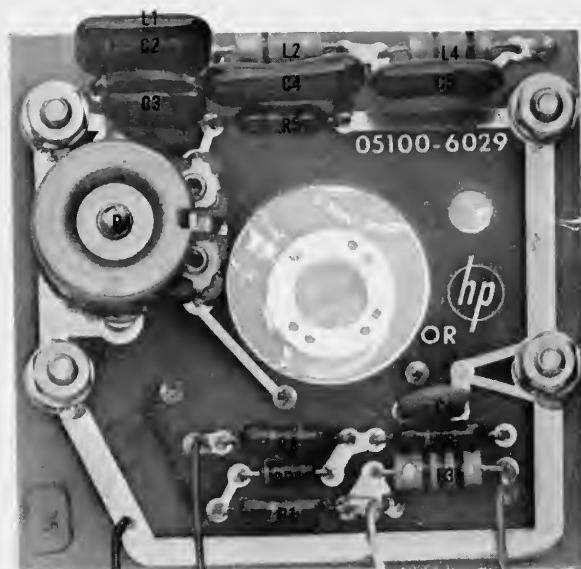
Figure 5-13. Pushbutton Switch A1 (Sheet 2)



A2



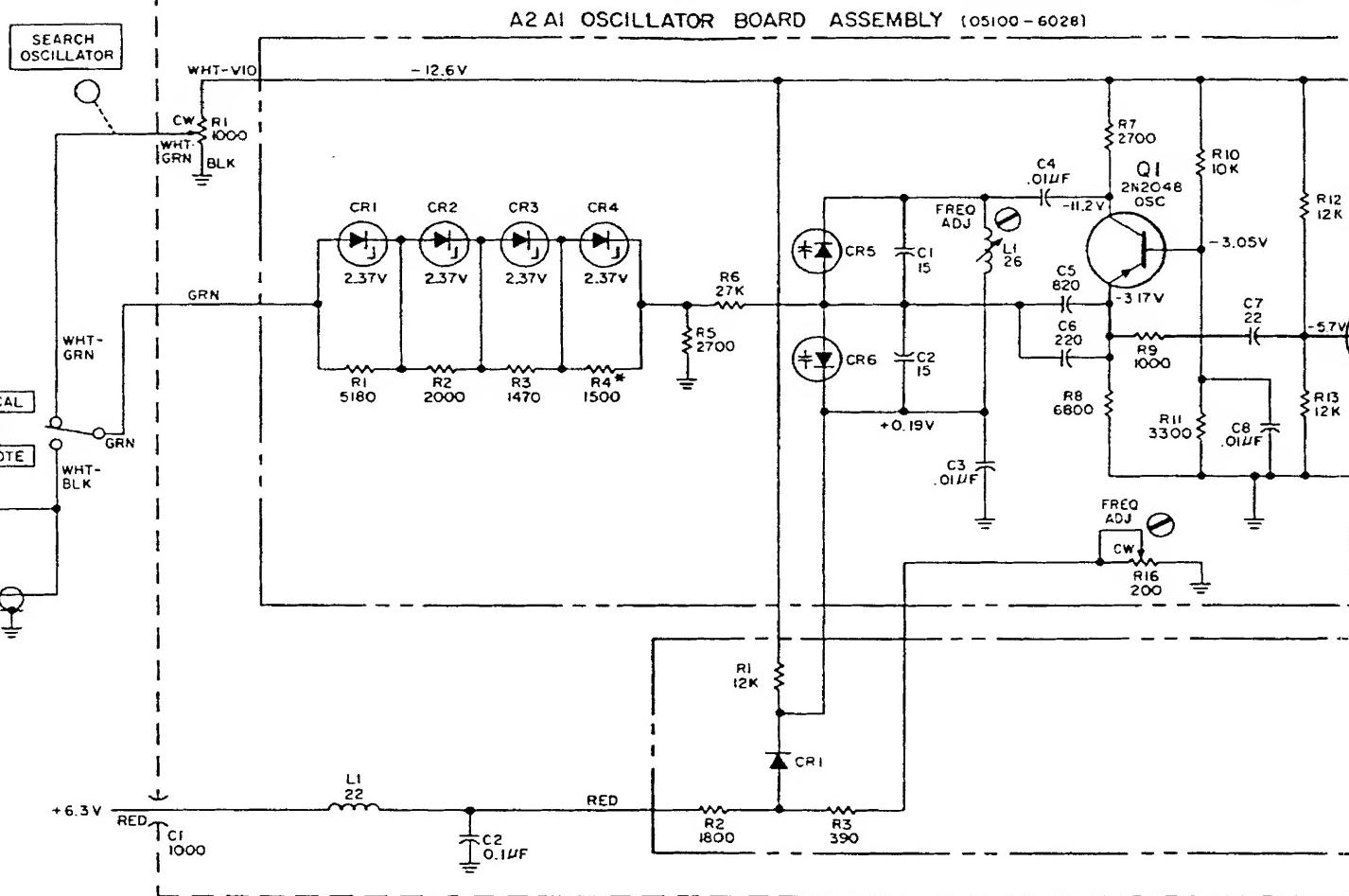
A2A1



A2A2

A2 SEARCH OSCILLATOR MODULE

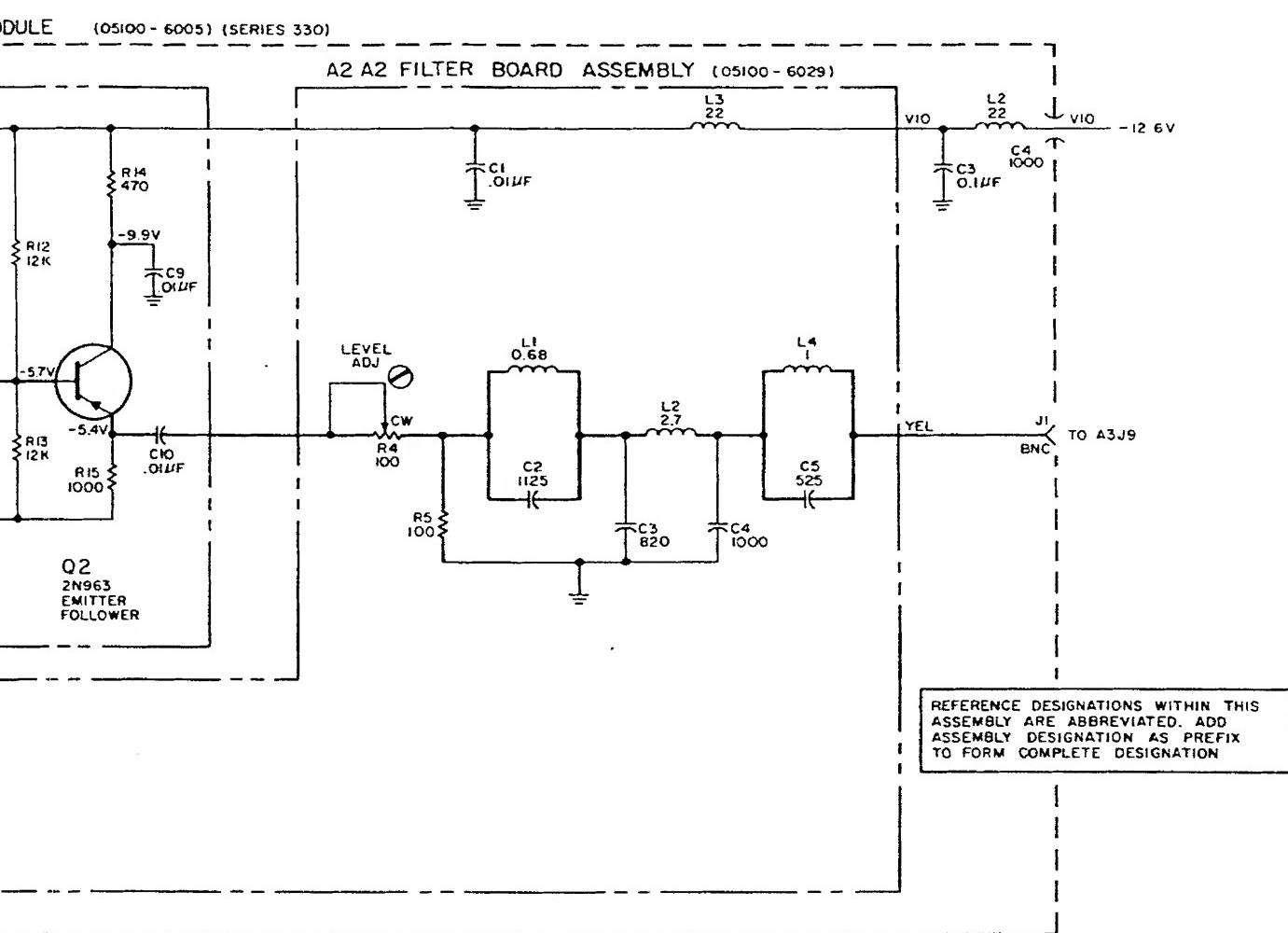
A2 AI OSCILLATOR BOARD ASSEMBLY (05100-6028)



REFERENCE DESIGNATIONS

| NO PREFIX | A2 | A2AI | A2A2 |
|-----------|------------------------------|---|-----------------------------------|
| J1 - 2 | C1 - 4 J1 LI - 2 RI | C1 - 10 CR1 - 6 LI Q1 - 2 RI - 16 | C1 - 5 CR1 LI - 4 RI - 5 |
| S2 | | | |

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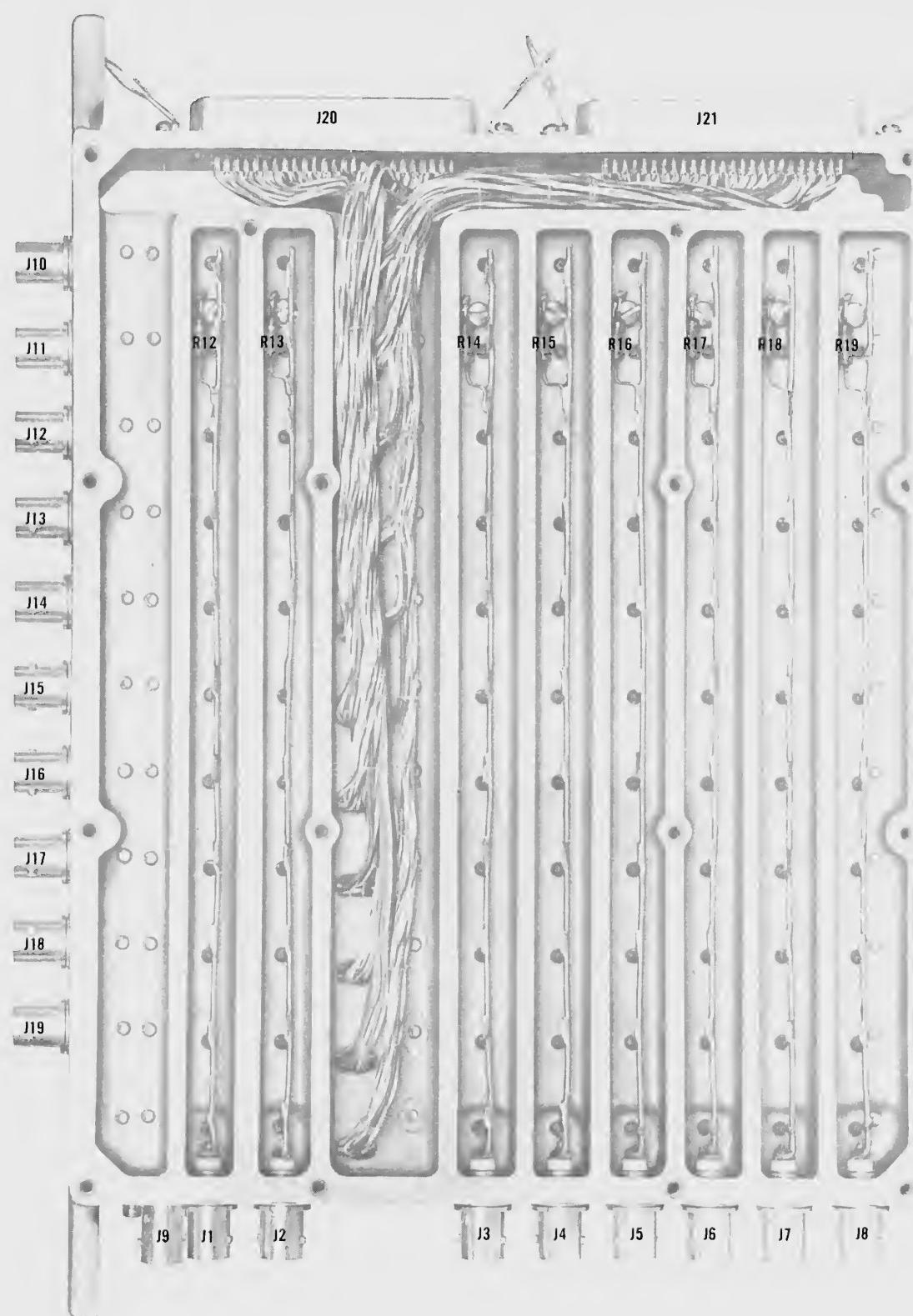


NOTES

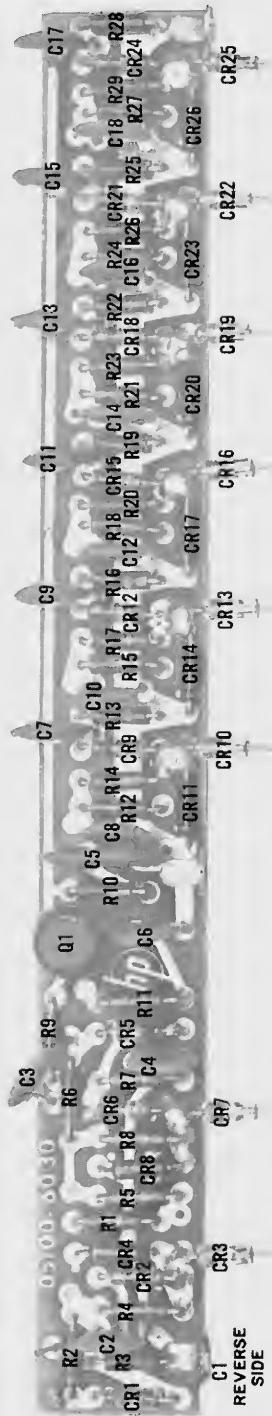
1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES
2. ASTERISK (*) INDICATES FACTORY
SELECTED COMPONENT, TYPICAL
VALUE GIVEN

05100-2-2

Figure 5-14. Search Oscillator



A3

**A3A1-A11**

REFERENCE DESIGNATIONS

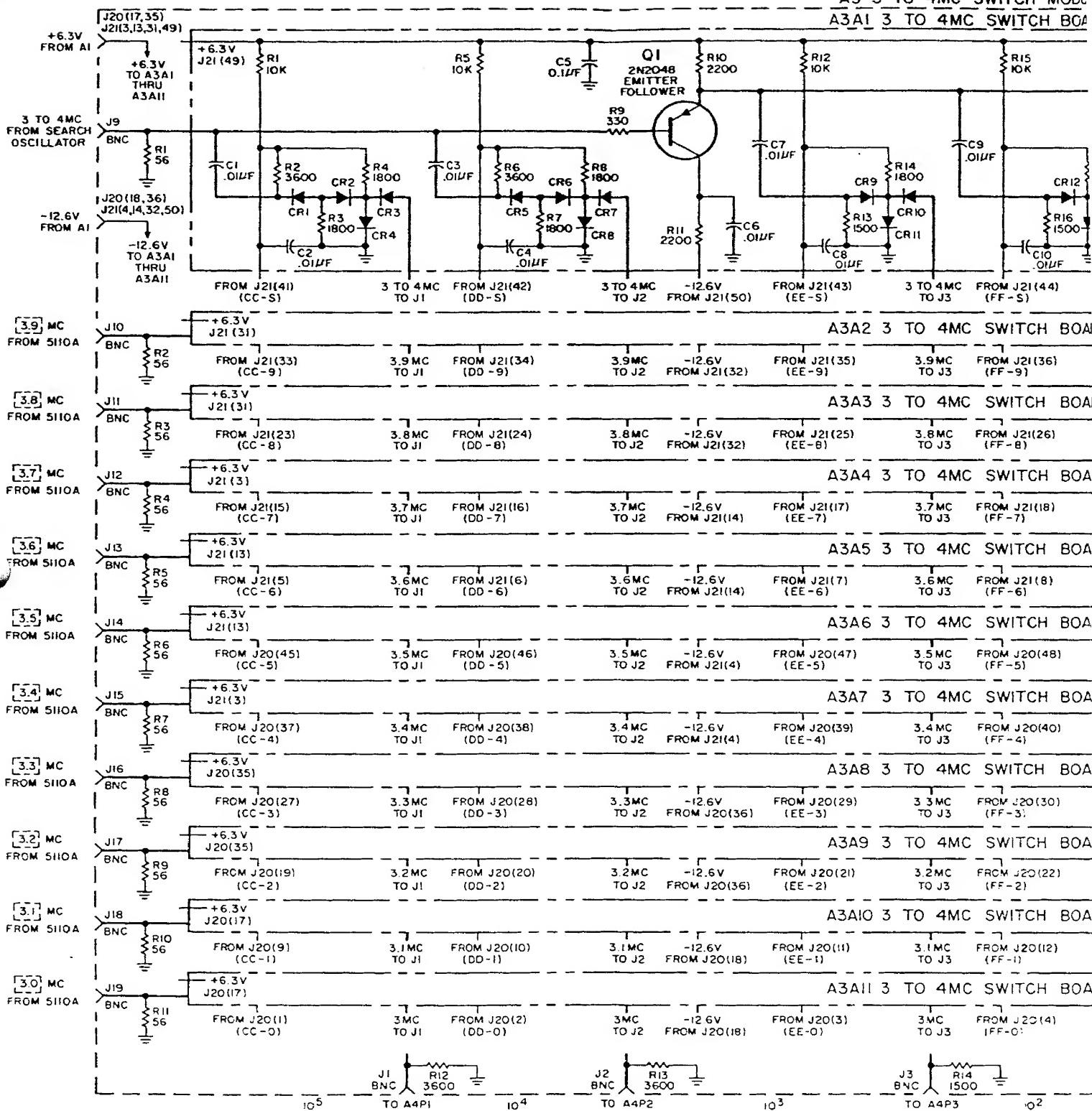
| A3 | A3A1-A3AII |
|---------|---------------------|
| J1 - 2I | C1 - 18 CRI - 26 |
| RI - 19 | Q1 RI - 29 |

NOTES

1. REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY DESIGNATION AS PREFIX TO FORM COMPLETE DESIGNATION
2. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS

05100-D-4

A3 3 TO 4MC SWITCH MOD
A3AI 3 TO 4MC SWITCH BOA



MODULE (05100 - 6006) (SERIES 330) (NOTE 1)
BOARD ASSEMBLY (05100 - 6030)

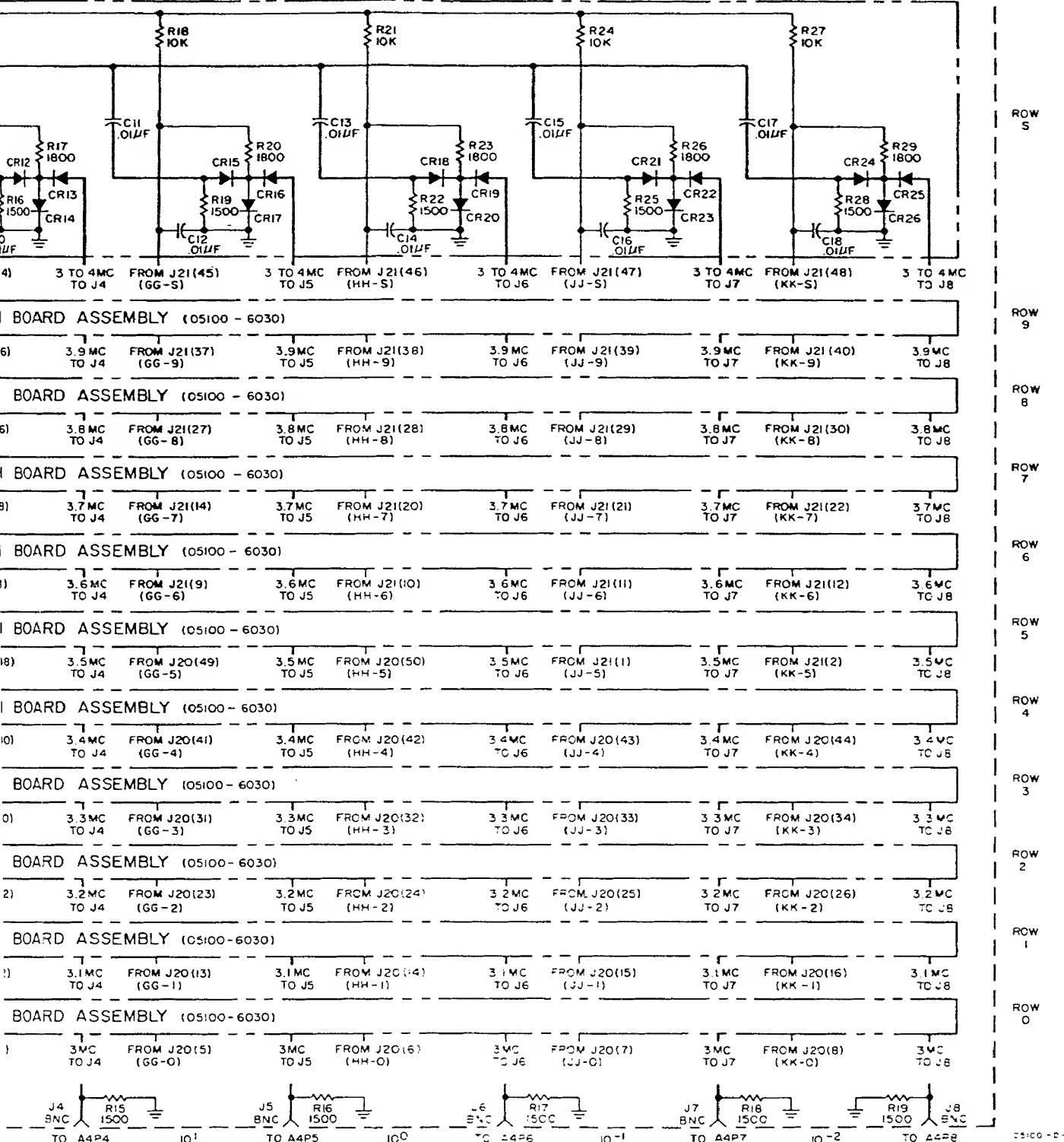
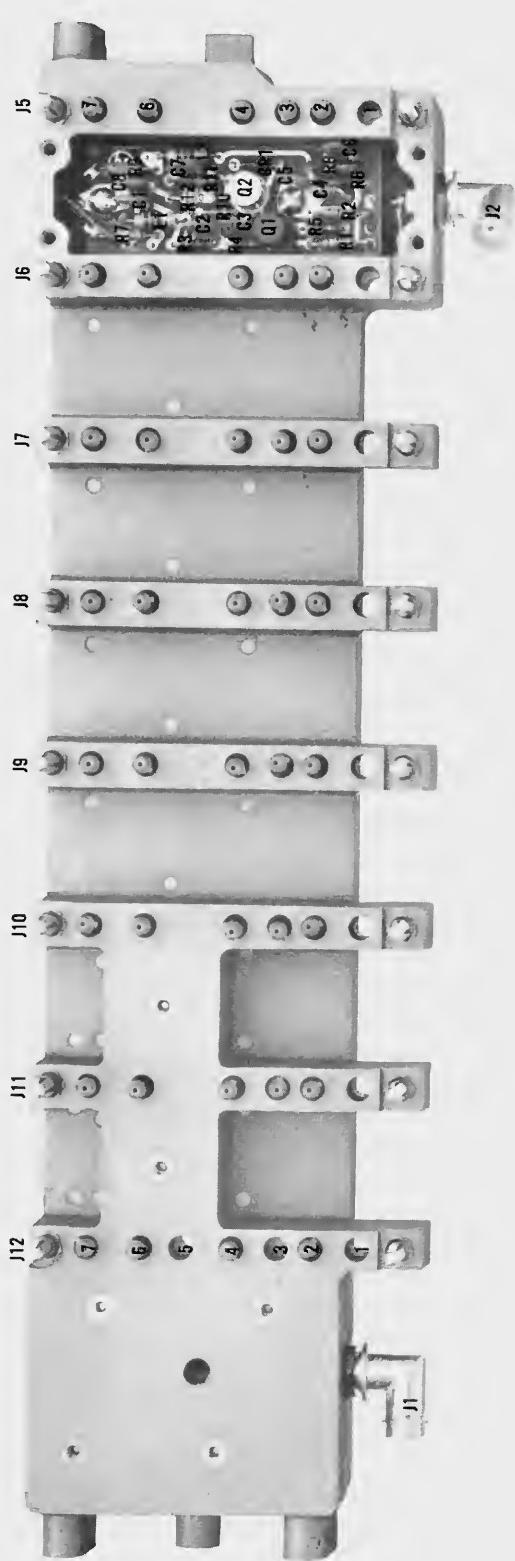
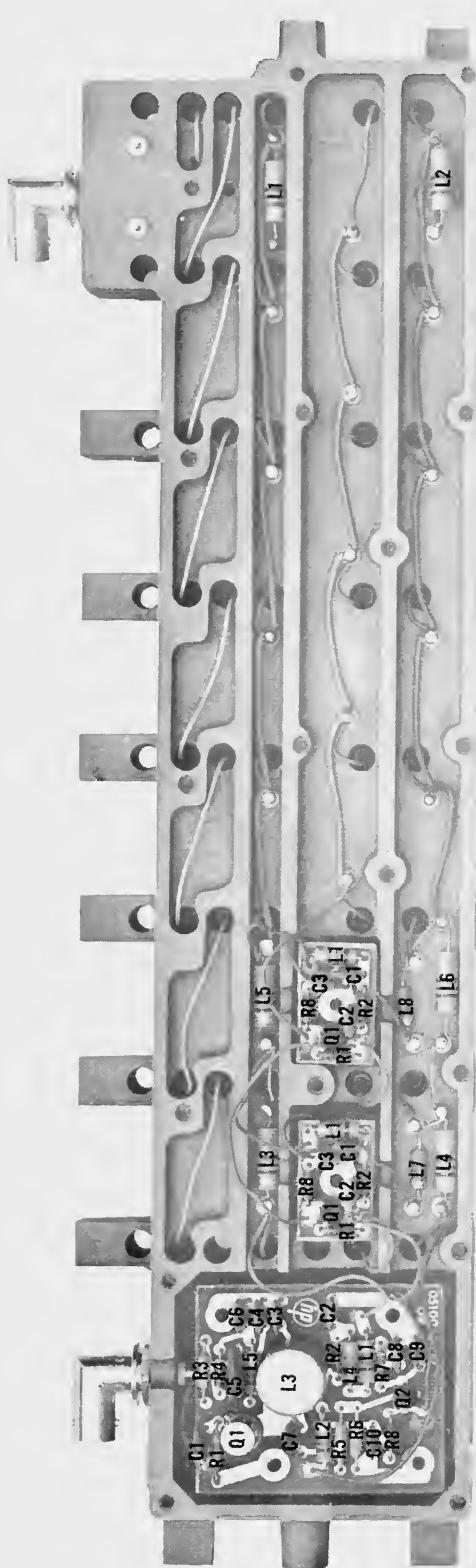


Figure 5-15. 3 to 4 Mc Switch



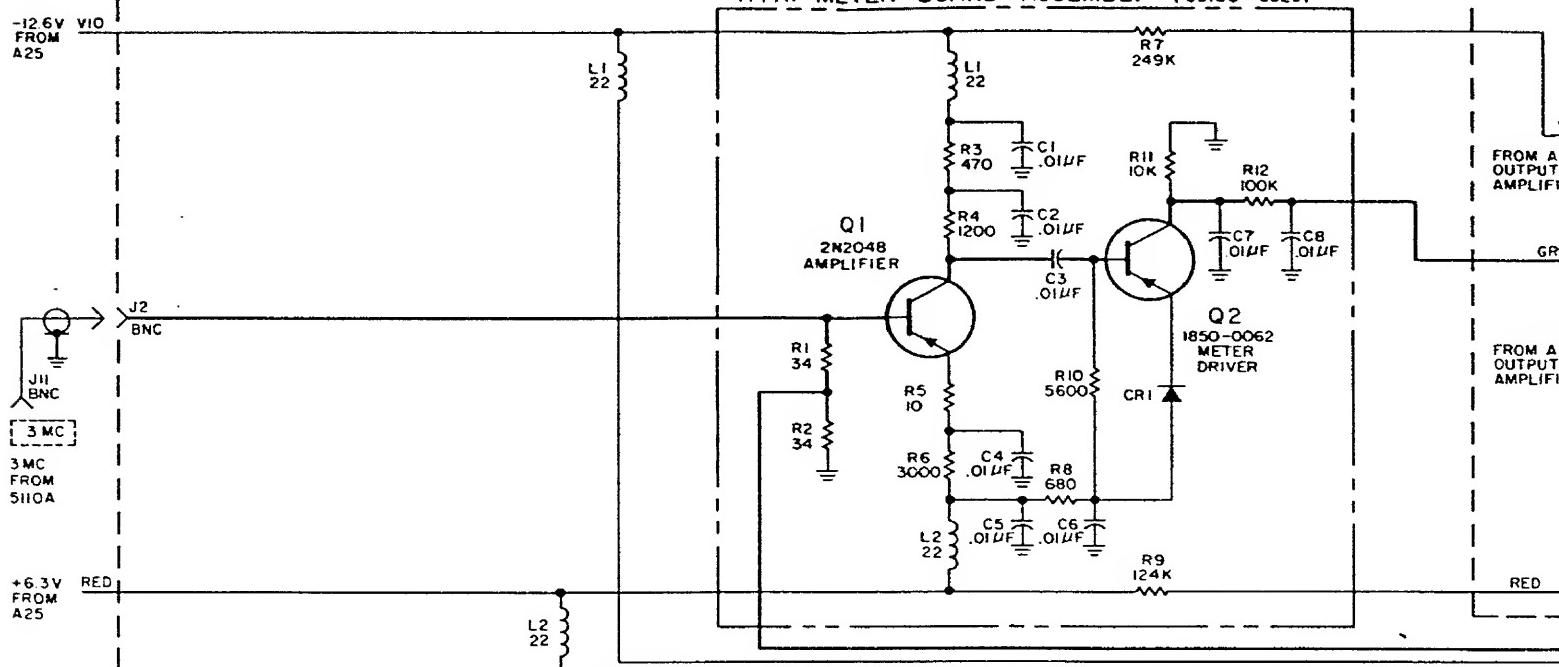
A4A1



A4A2, A3, A4

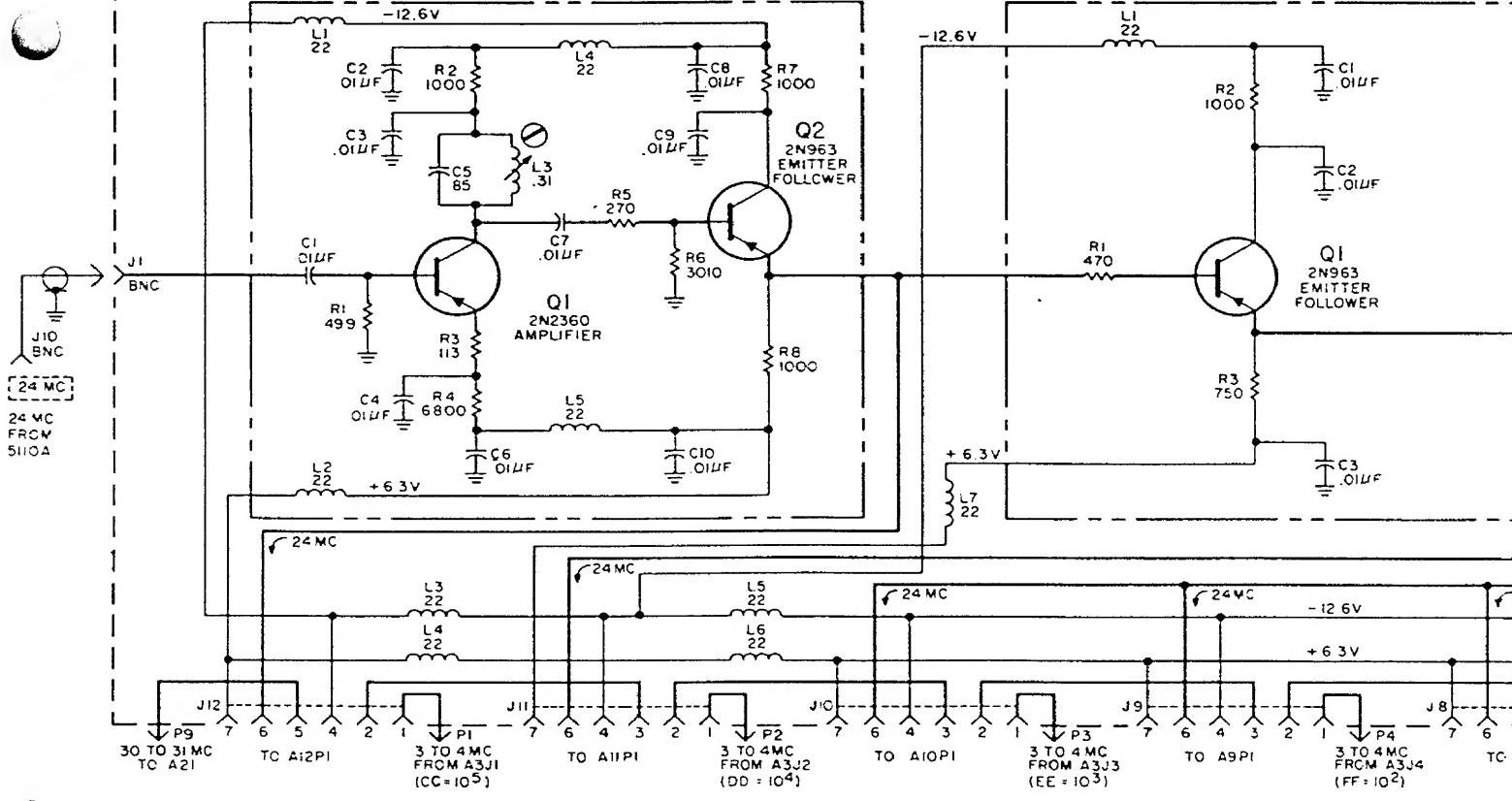
A4 CONNECTOR BLOCK MODULE (05100 - 6004) (SERIES 330)

A4 AI METER BOARD ASSEMBLY (05100 - 6026)



A4A2 AMPLIFIER BOARD ASSEMBLY (05100 - 6027)

A4A3 24MC Emitter Follower Assembly (05100 - 6028)



Section V
Figure 5-16

NOTES

I. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATIONS

| NO PREFIX | A4 | A4A1 | A4A2 | A4A3/ A4A4 |
|--------------|---------------------|-------------------|------------------|---------------|
| J10,II | J1,2,5-12 LI - 8 | C1 - 8 CRI | C1 - 10 | C1 - 3 |
| MI | PI - 9 | LI - 2 | LI - 5 | LI |
| S3 | | Q1 - 2 RI - 12 | Q1 - 2 RI - 8 | Q1 R1 - 3 |

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REFERENCE DESIGNATIONS WITHIN THIS
ASSEMBLY ARE ABBREVIATED. ADD
ASSEMBLY DESIGNATION AS PREFIX TO
FORM COMPLETE DESIGNATION

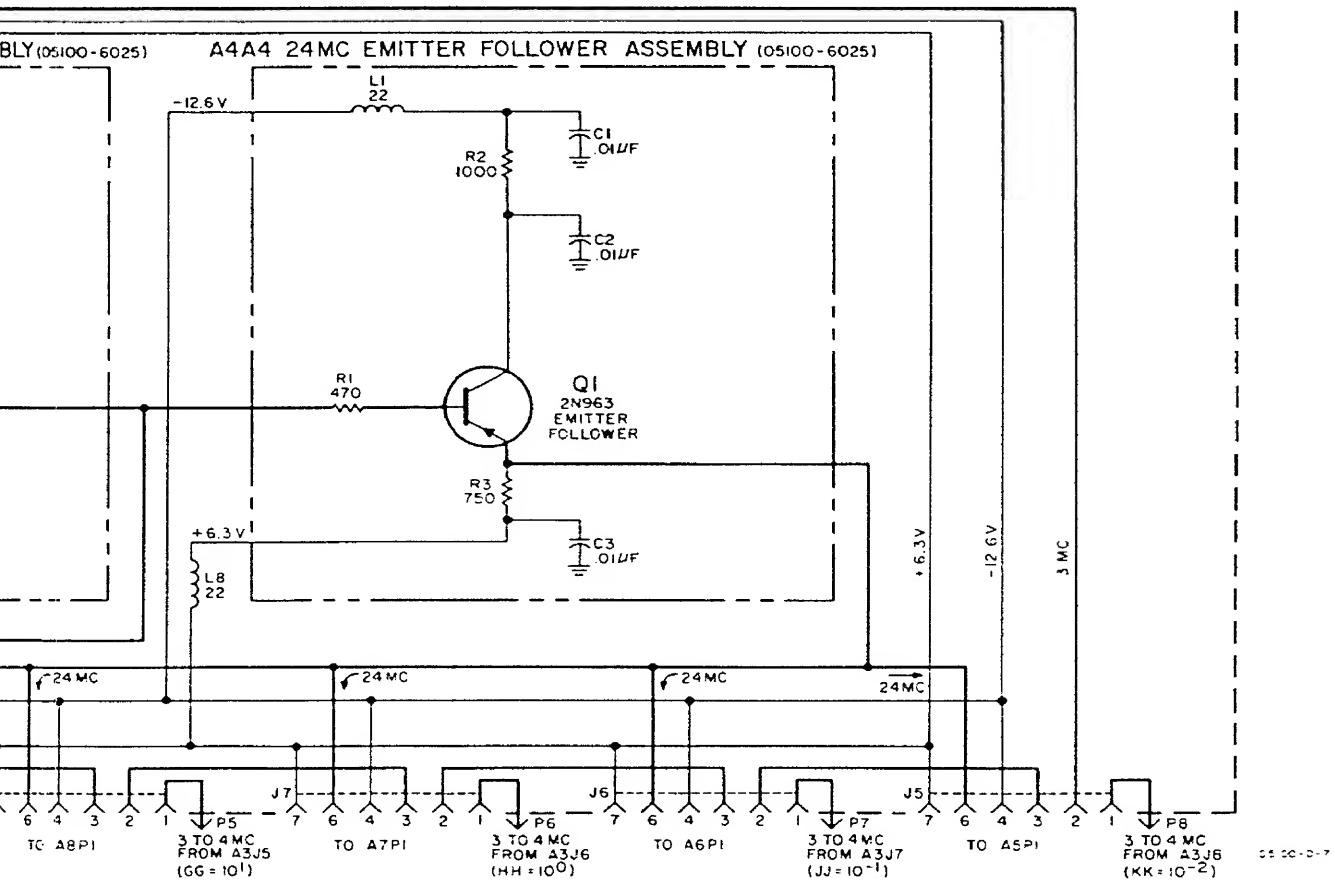
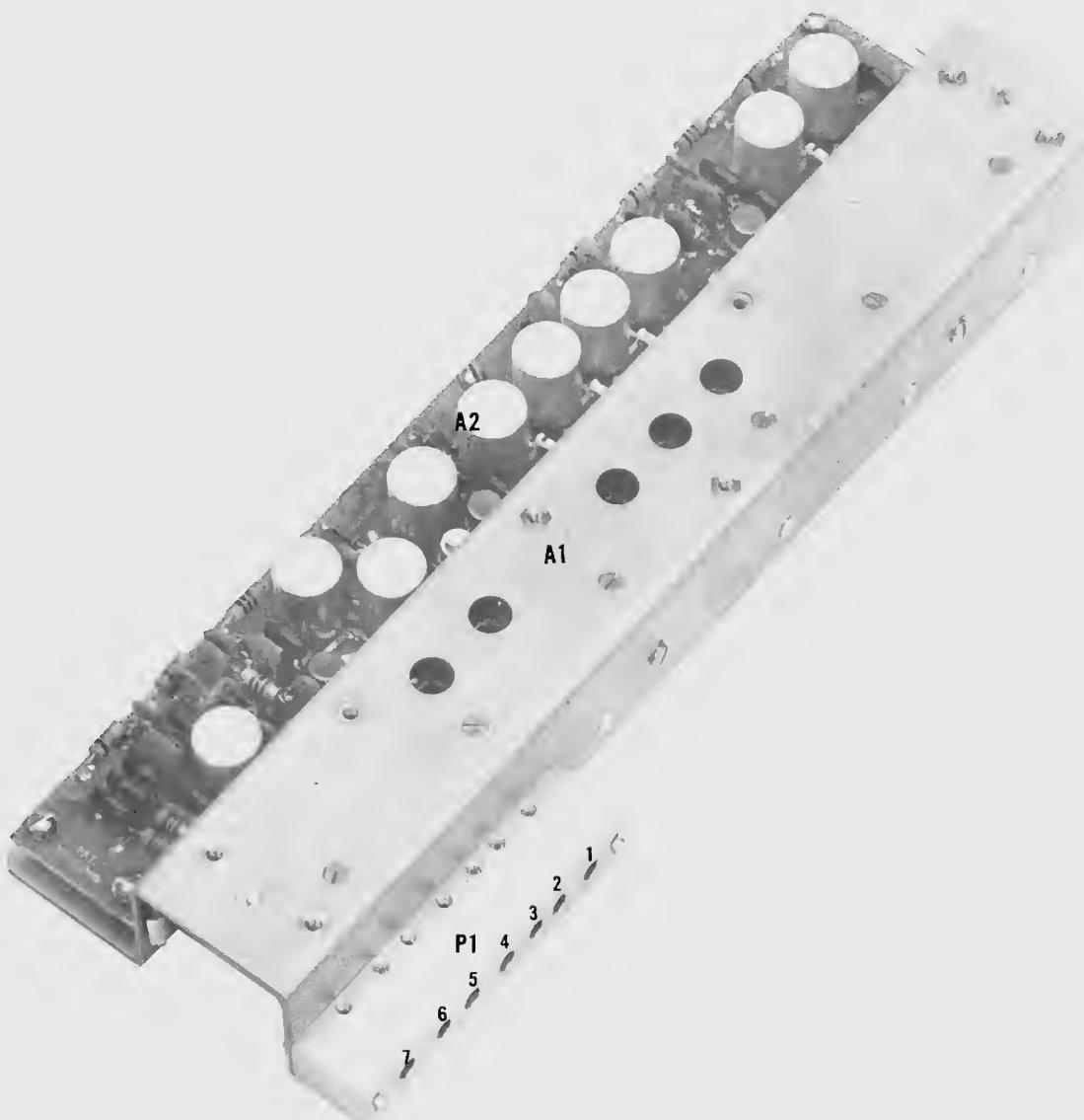
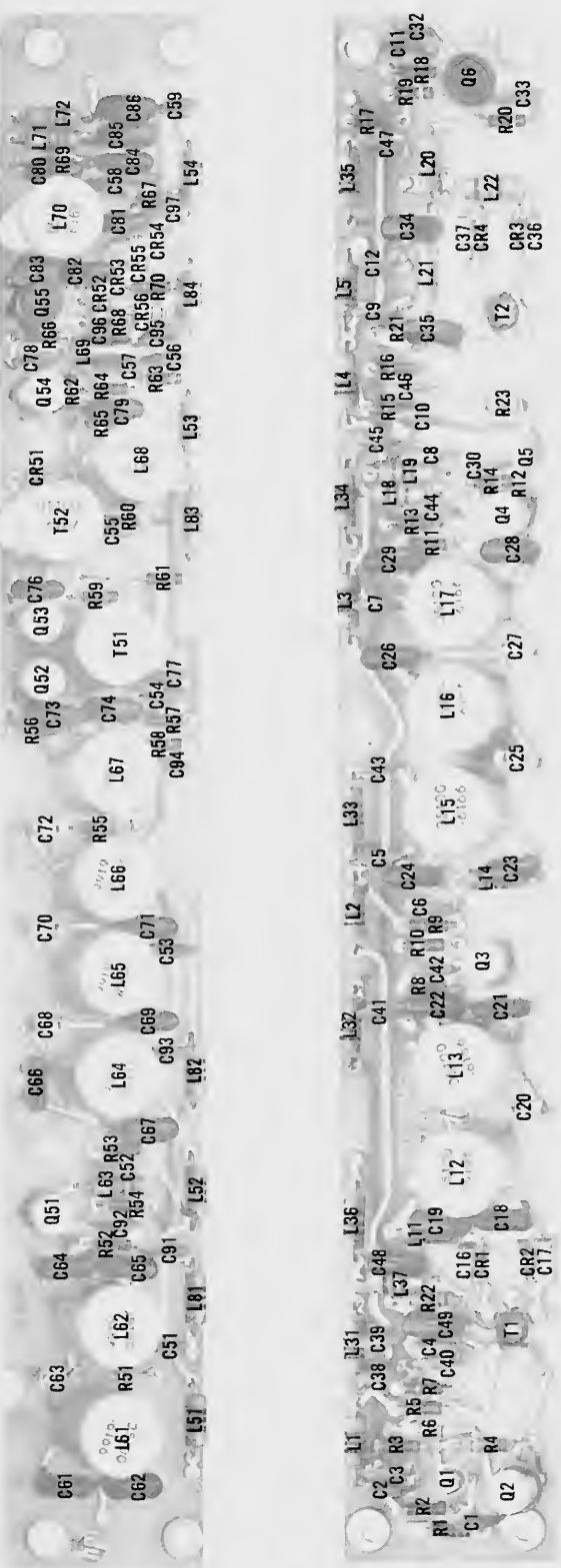


Figure 5-16. Connector Block A-



A5-A11



A5-A11A2

A5-A12A1

NOTES

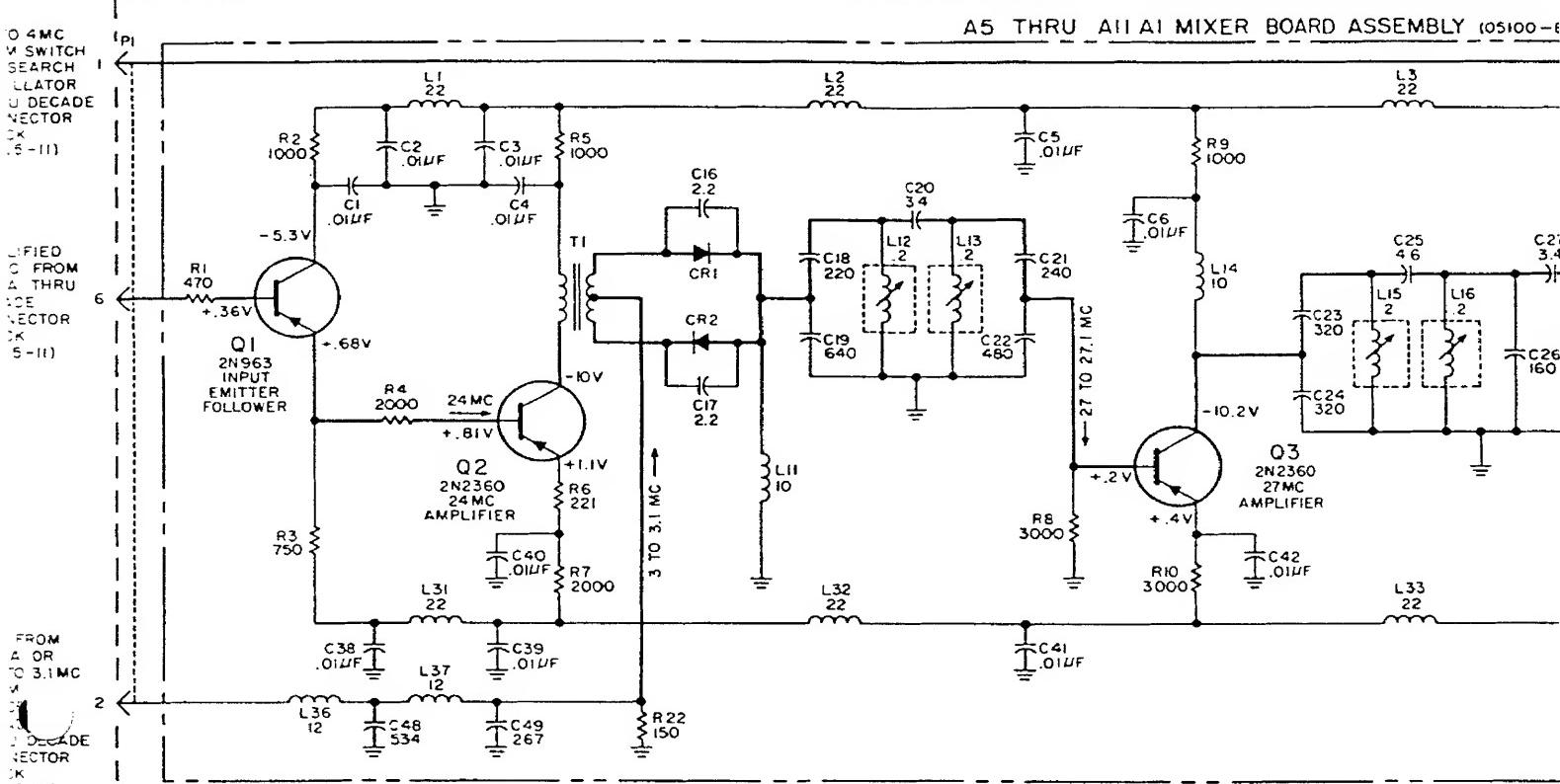
1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES
2. ASTERISK (*) INDICATES FACTORY
SELECTED COMPONENT, TYPICAL
VALUE GIVEN.

REFERENCE DESIGNATIONS

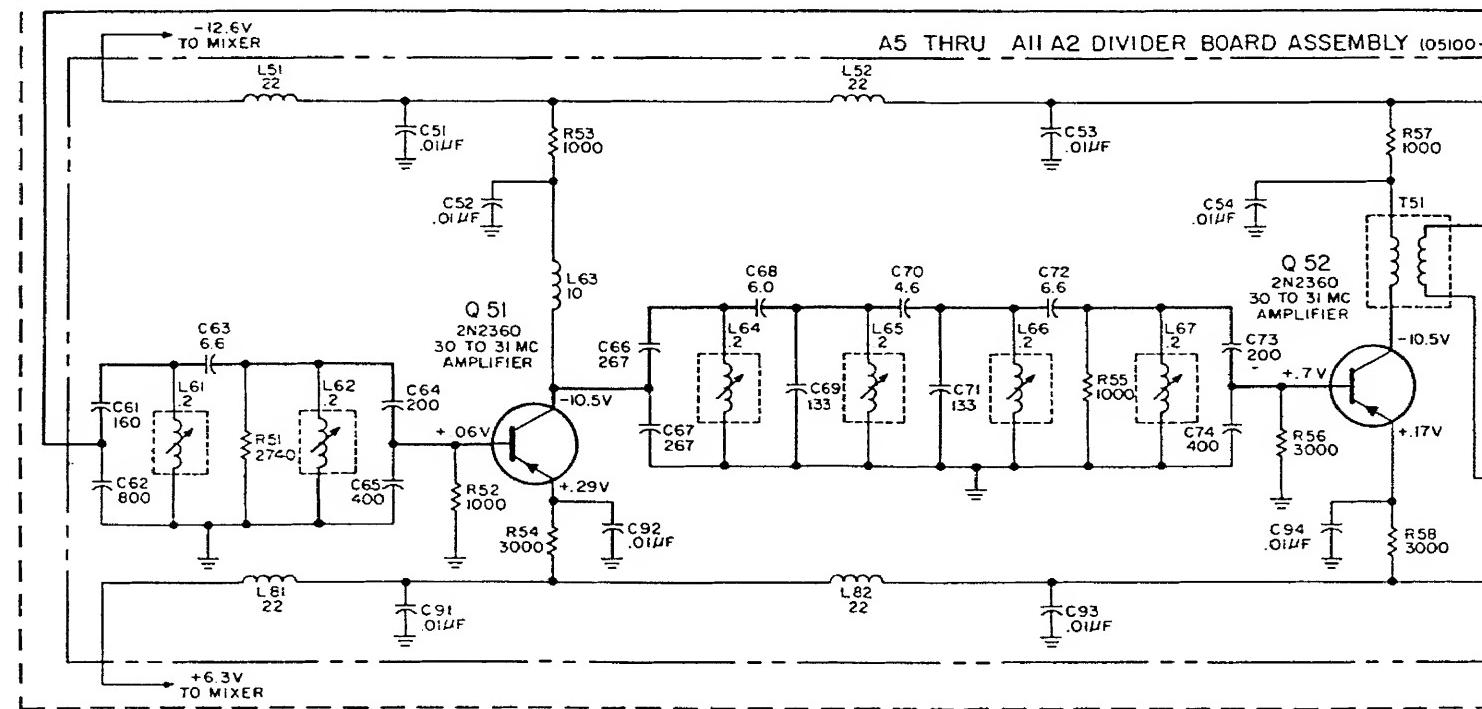
| A5-AII | A5-AIIAI | A5-AIIA2 |
|--------|---|--|
| P1 | C1 - I2, I6 - 30, 32 - 49 CR1 - 4 L1 - 5 I1 - 22, 3I - 37 Q1 - 6 RI - 23 T1, 2 | C51 - 59, 61 - 74, 76 - 86, 91 - 97 CR51 - 56 L51 - 54, 61 - 72, 81 - 84 Q51 - 55 R51 - 70 T51, 52 |

A5 THRU AII MIXER/DIVIDER MODULE (05100-6)

A5 THRU AII A1 MIXER BOARD ASSEMBLY (05100-6)



A5 THRU AII A2 DIVIDER BOARD ASSEMBLY (05100-6)



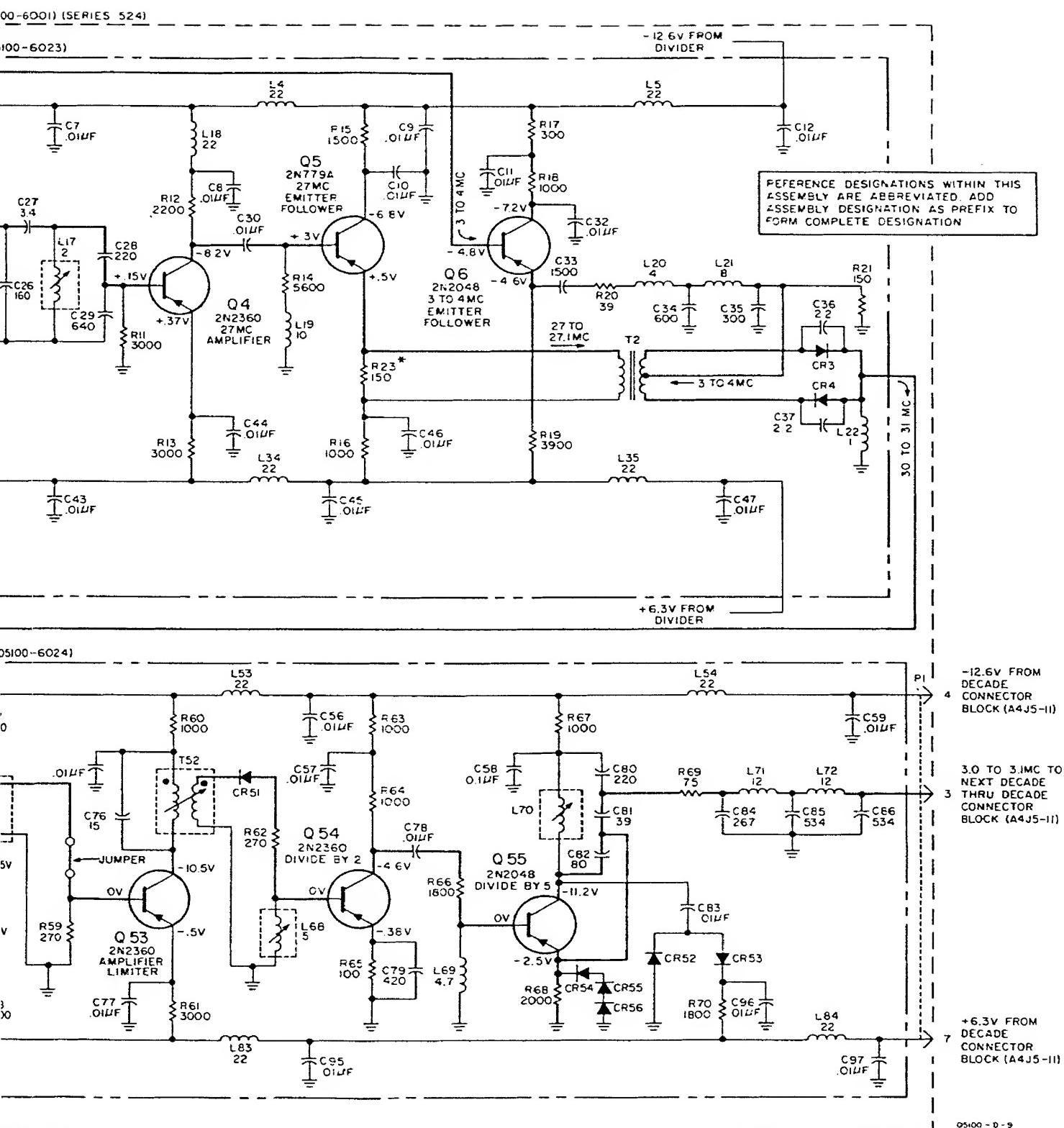
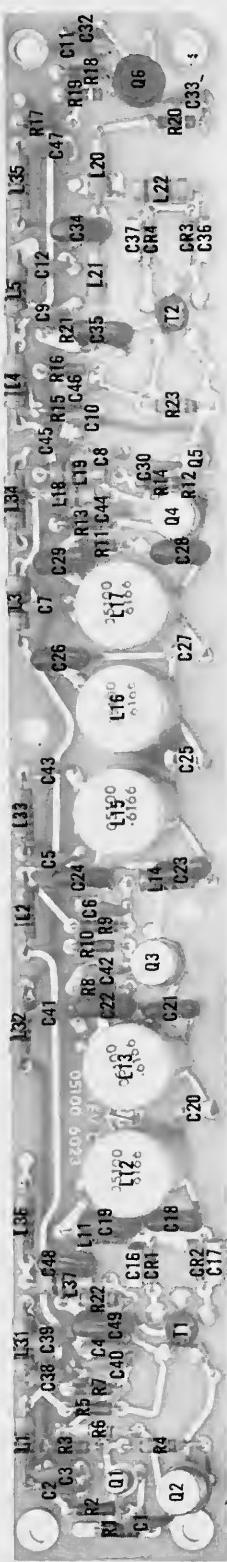
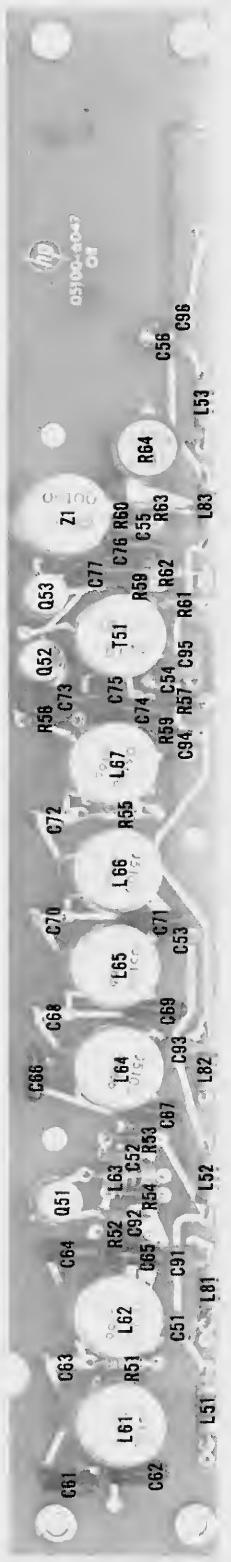


Figure 5-17. Mixer/Divider A5 through .



A5-A12A1



A12A2

NOTES

1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES
2. ASTERISK (*) INDICATES FACTORY
SELECTED COMPONENT, TYPICAL
VALUE GIVEN.

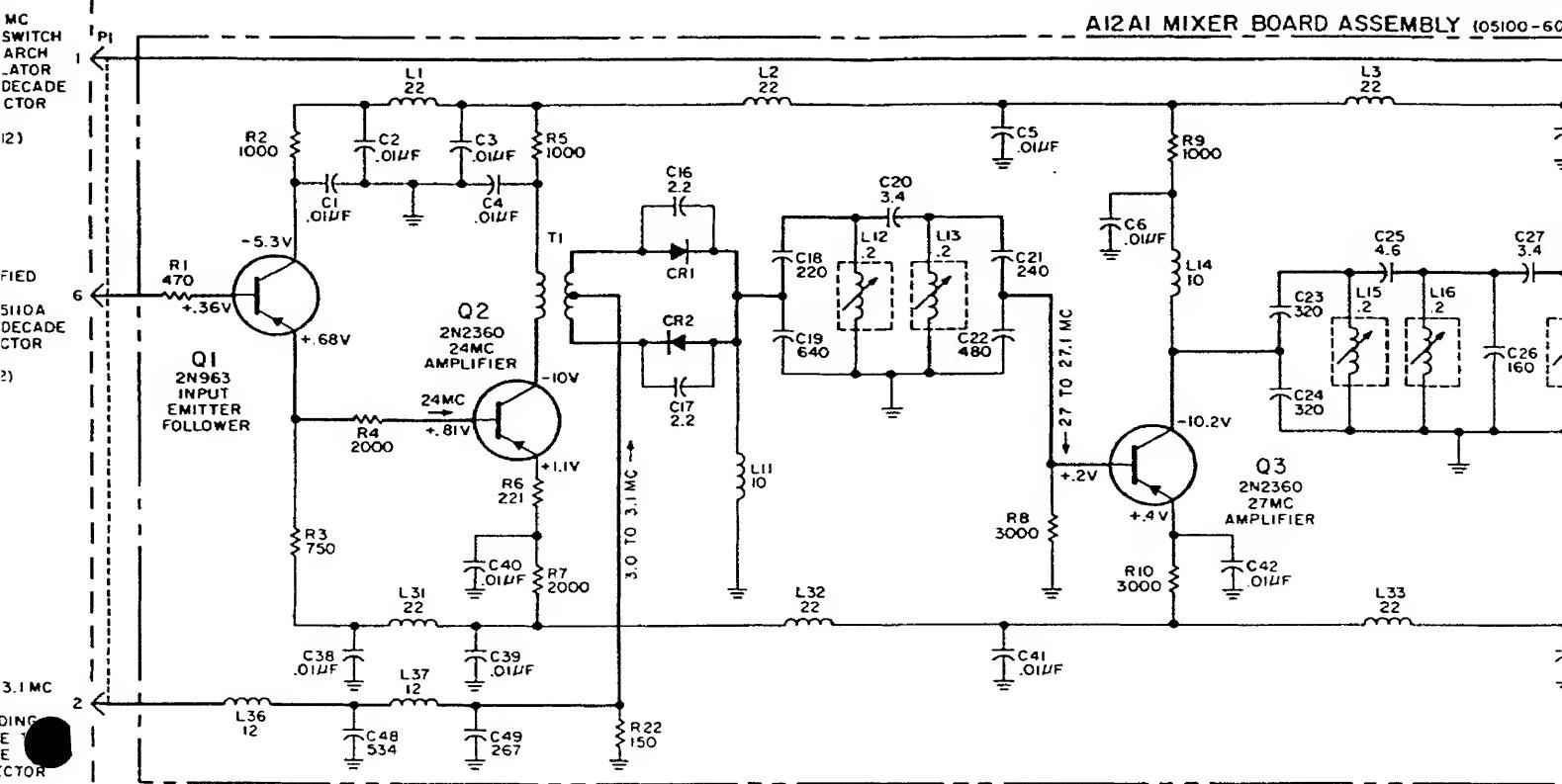
REFERENCE DESIGNATIONS

| AI2 | AI2A1 | AI2A2 |
|-----|--|---|
| PI | C1 - I2, I6 - 30, 32 - 49 CR1 - 4 L1 - 5, II - 22, 3I - 37 Q1 - 6 R1 - 23 T1, 2 | C51 - 56, 6I - 78, 9I - 96 L51 - 53, 6I - 68, 8I - 83 Q51 - 53 R51 - 64 T51 Z1 - 100 |

05100-D-10

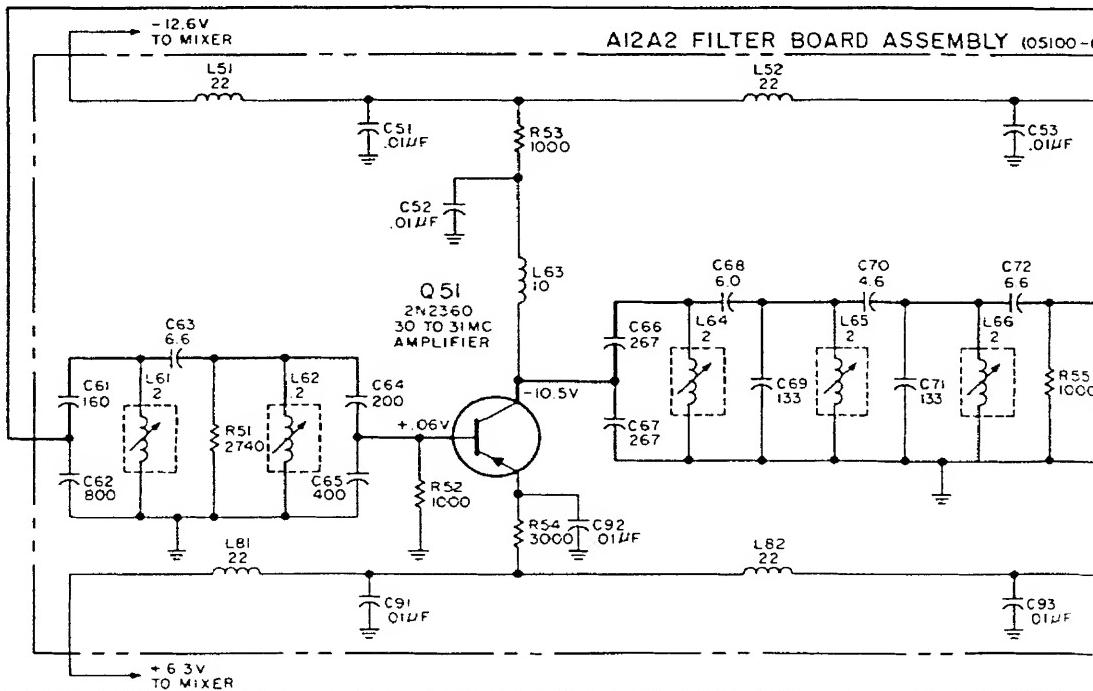
A12 MIXER/FILTER MODULE (05100-6002)

A12AI MIXER BOARD ASSEMBLY (05100-6002)



REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED ADD ASSEMBLY DESIGNATION AS PREFIX TO COMPLETE DESIGNATION

A12A2 FILTER BOARD ASSEMBLY (05100-6002)



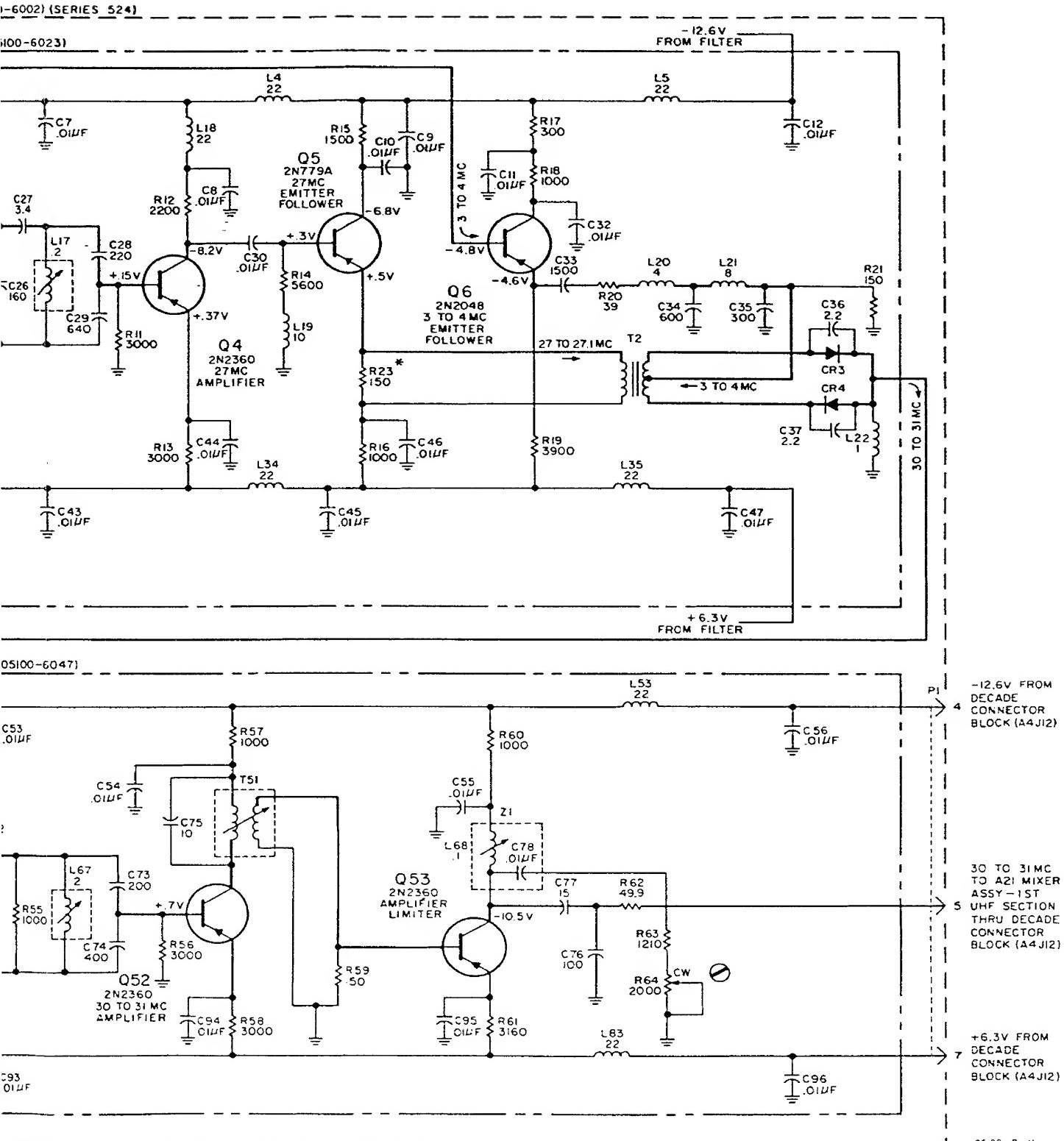
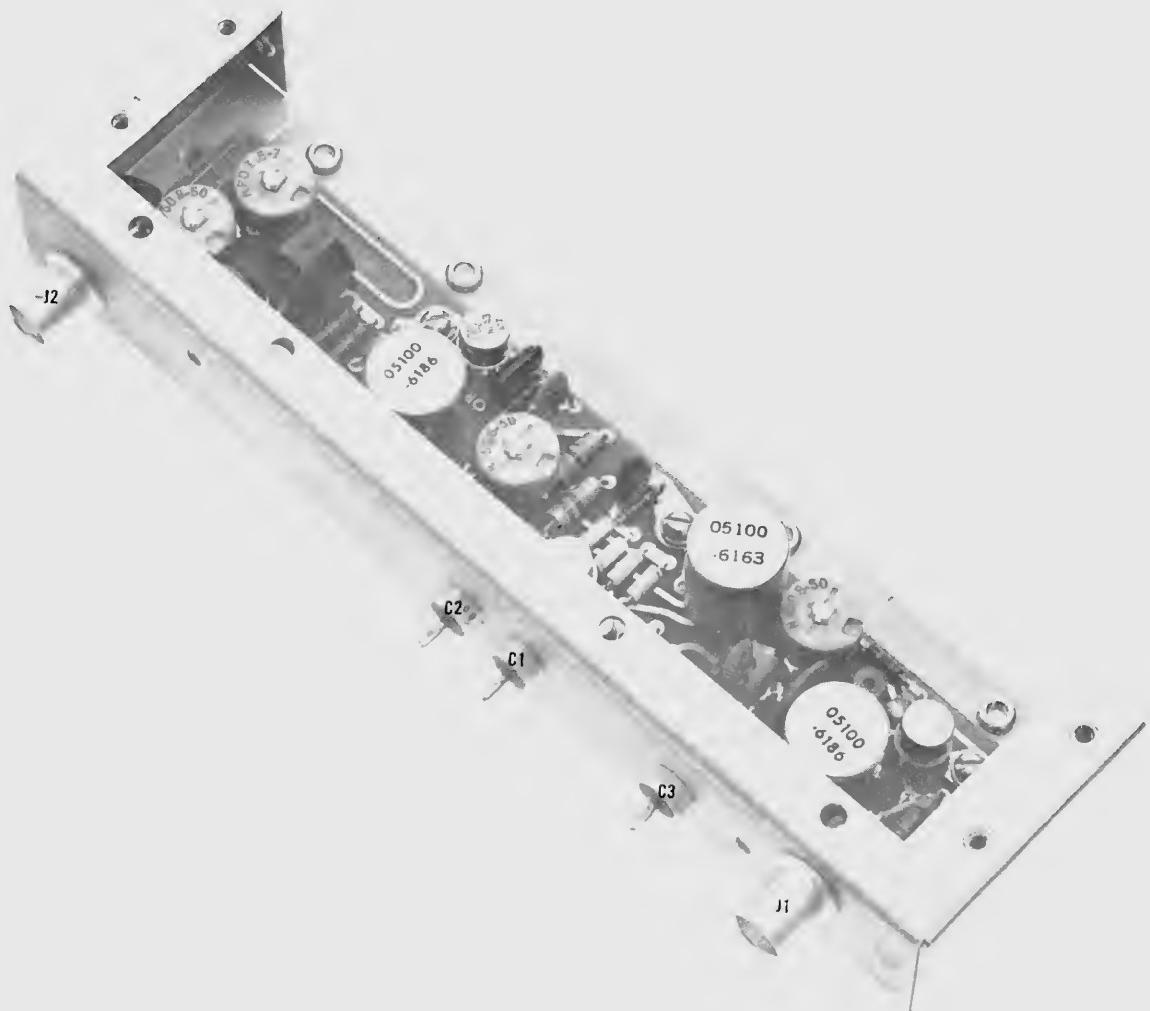
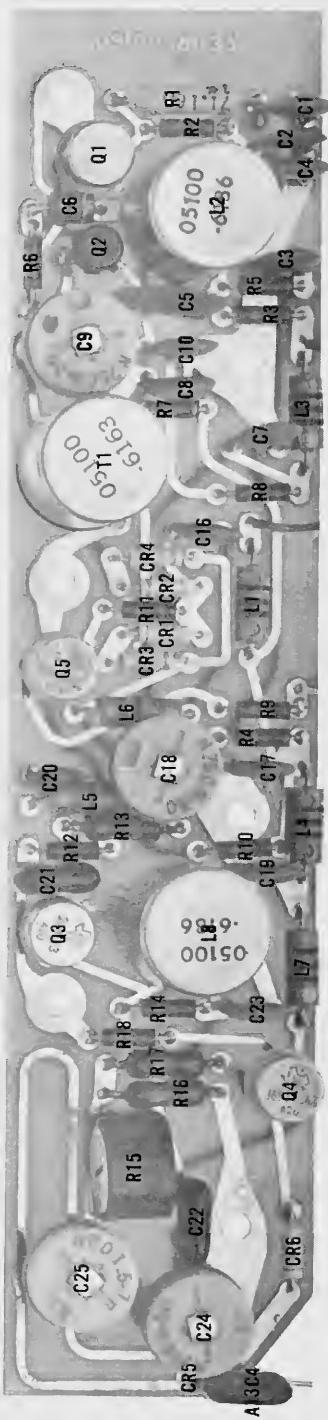


Figure 5-18. Mixer/Filter A



A13-A17

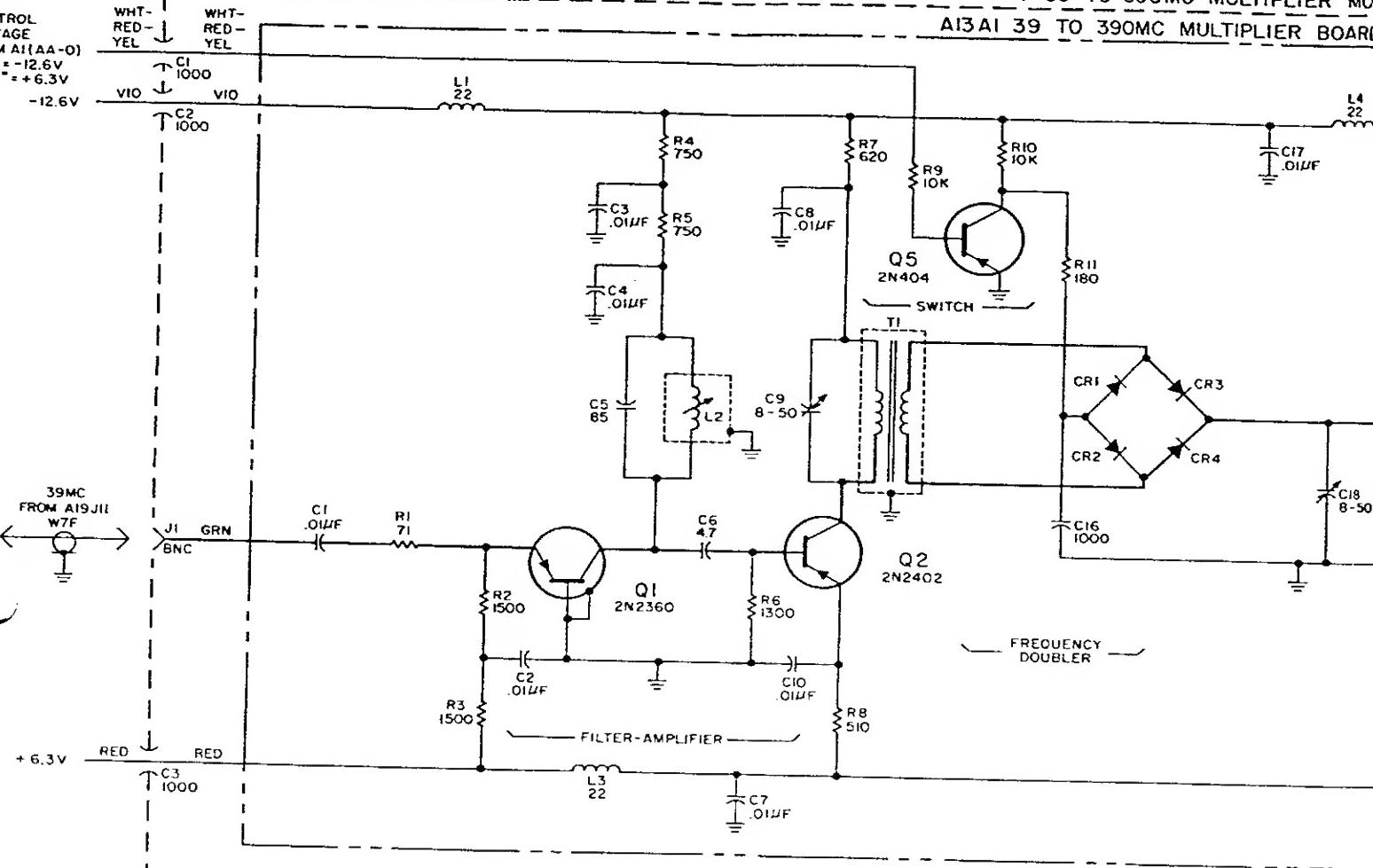


A13A1

CONTROL
VOLTAGE
FROM AI3(AA-O)
"ON" = -12.6V
"OFF" = +6.3V
-12.6V

AI3 39 TO 390MC MULTIPLIER MO

AI3AI 39 TO 390MC MULTIPLIER BOARD

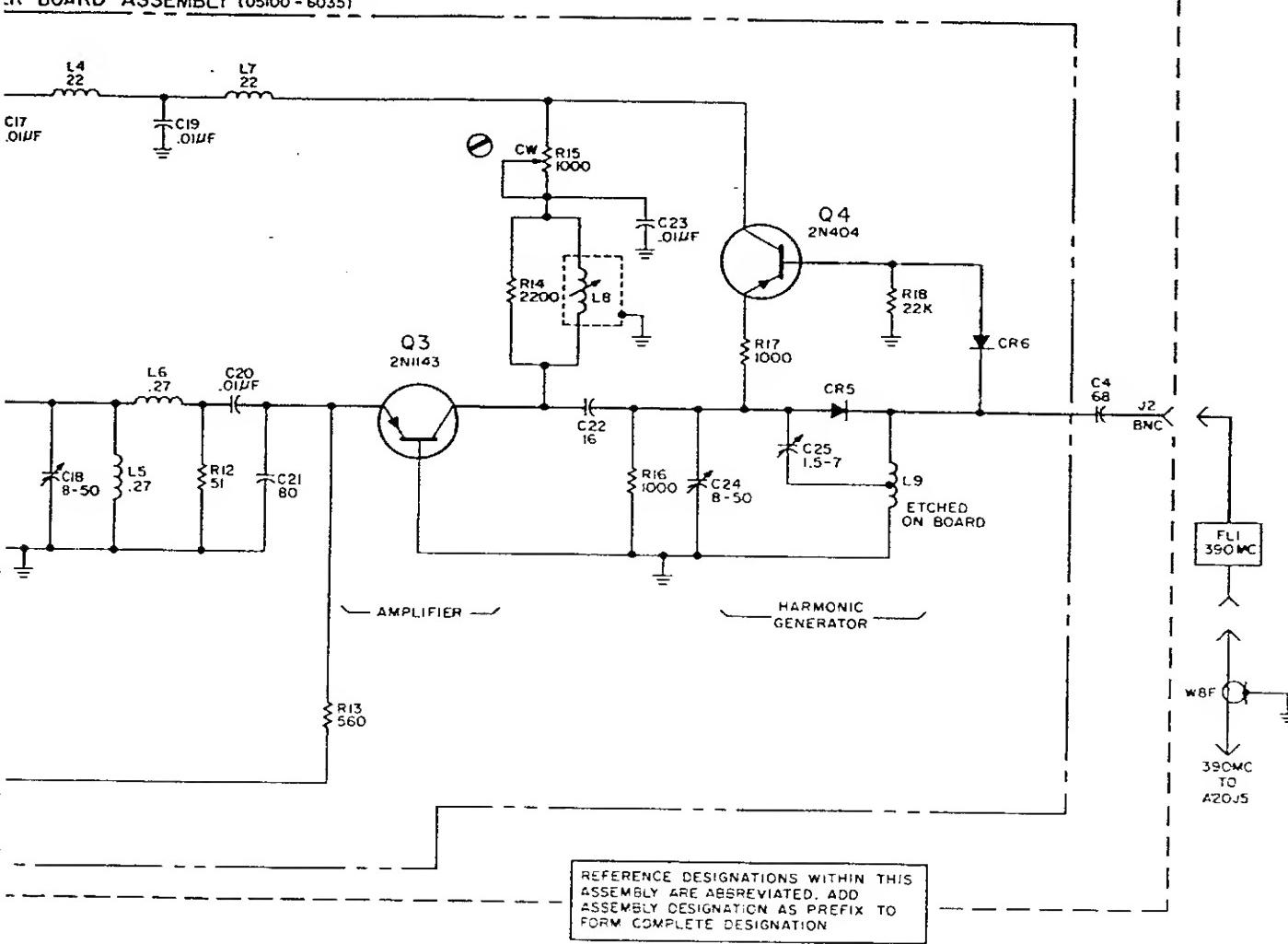


NOTES

- I. UNLESS OTHERWISE INDICATED
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATIONS

| NO PREFIX | AI3 | AI |
|--------------|-----|------------------------------|
| C1 - 4 | | C1 - 16 CR1 |
| J1, 2 | | J1 - J2 - R1 - T1 - |
| W7F, W8F | | |



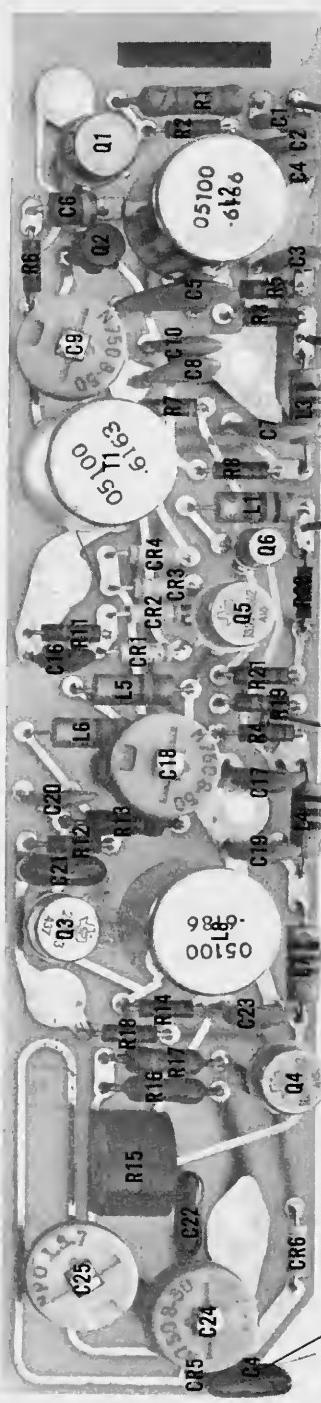
DESIGNATIONS

| | |
|---|---|
| 3 | A13A1 |
| 4 | C1-10, 16-25 CR1-6 L1-9 C1-5 R1-18 T1 |

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55-10-1-2

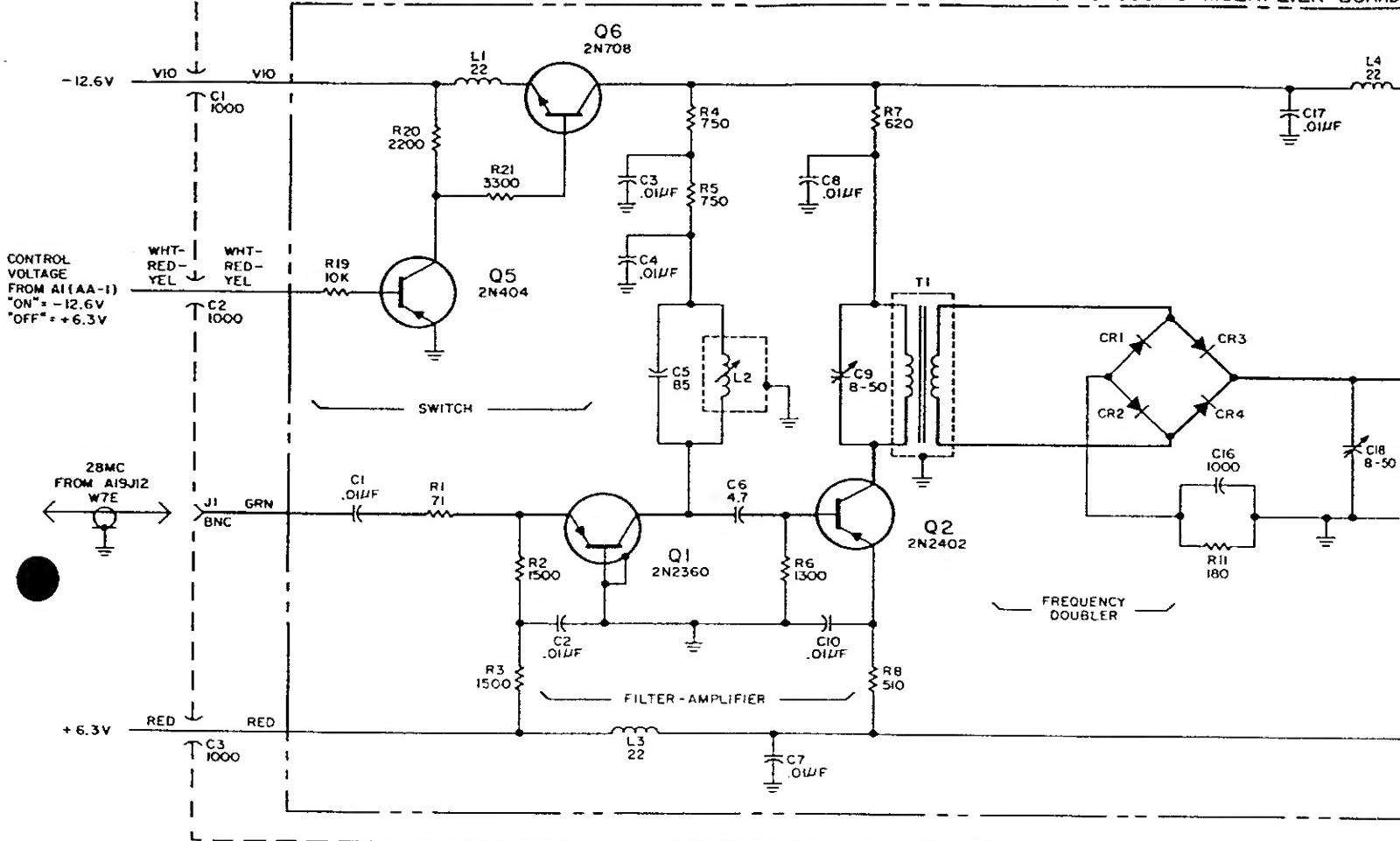
Figure 5-19. 39 to 390 Mc Multiplier A13



(Add module Prefix
to component)

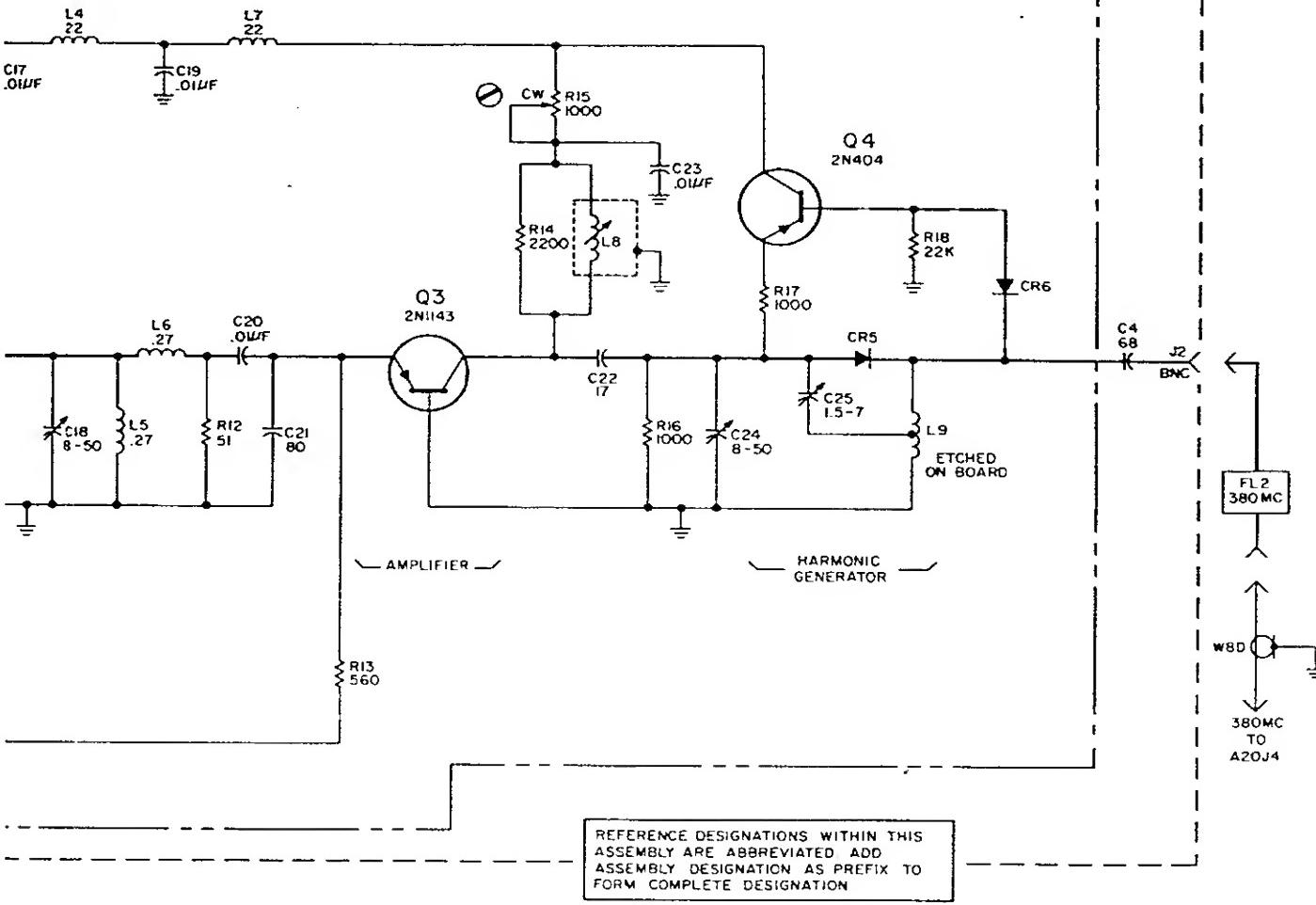
A14A1-A17A1

A14 38 TO 380MC MULTIPLIER MOD
A14 AI 38 TO 380MC MULTIPLIER BOARD



REFERENCE DESIGNATIONS

| NO PREFIX | A14 | A |
|--------------|------------------|--------------------------|
| FL2 | C 1 - 4 J 1,2 | C 1 L 1 CR 1 |
| | W7E, W8D | L 1 O 1 R 1 T 1 |



DESIGNATIONS

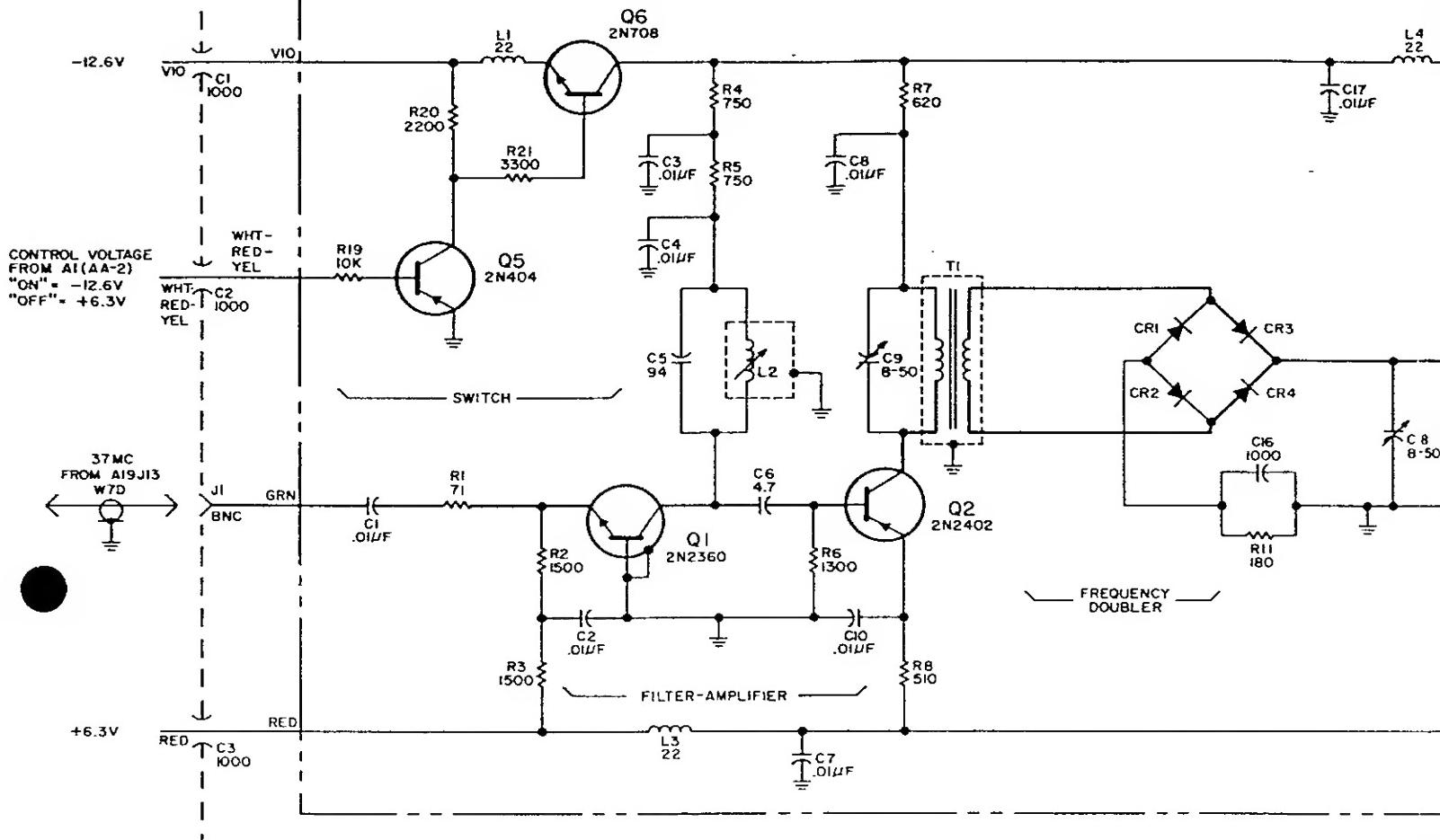
| | |
|-----|--|
| .14 | A14AI |
| - 4 | C 1 - 10, 16 - 25 CR1 - 6 |
| 2 | L 1 - 9 O 1 - 6 R 1 - 8, 11 - 21 T 1 |

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05100-5-13

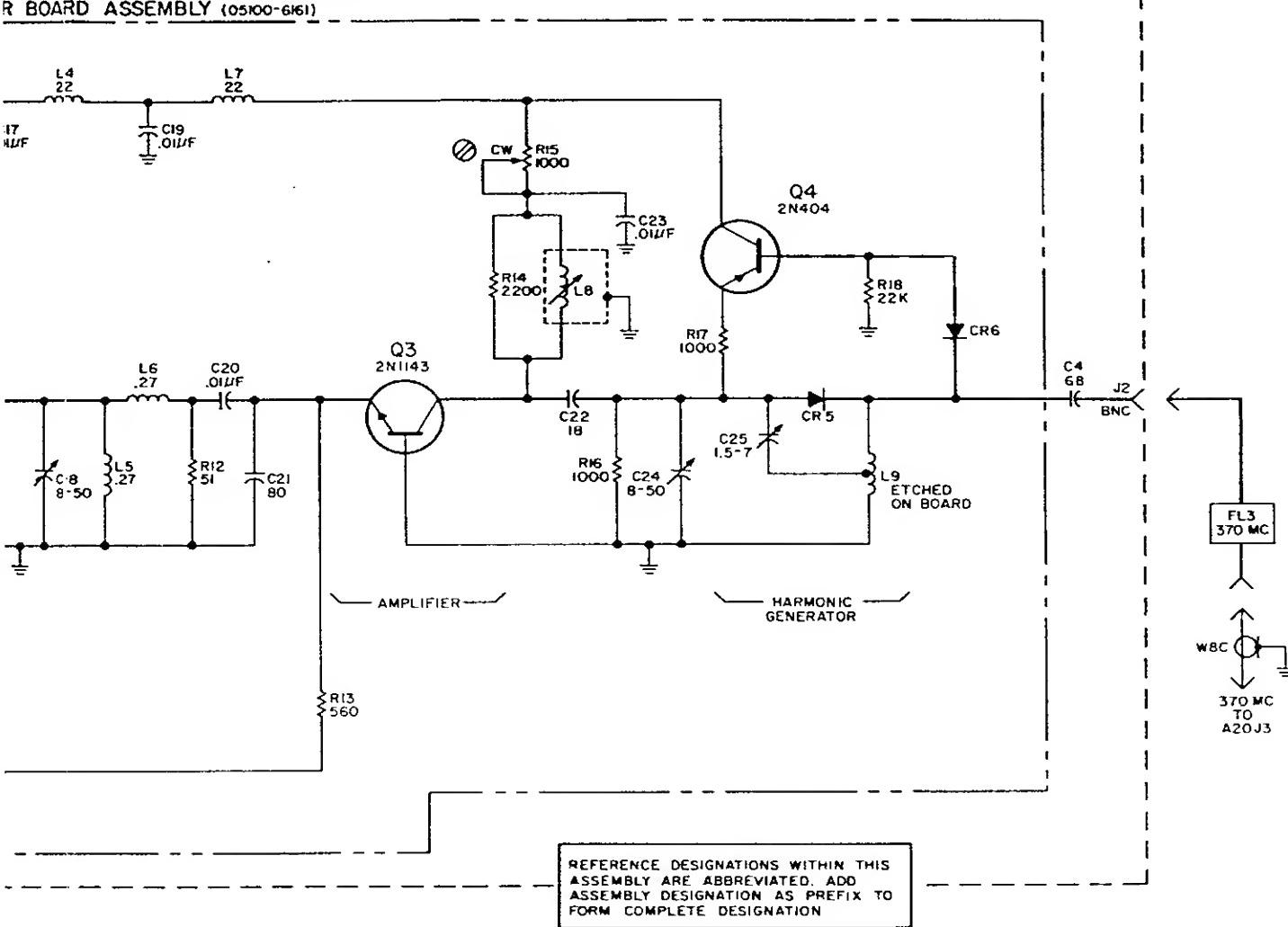
Figure 5-20. 38 to 380 Mc Multiplier A14

A15 37 TO 370MC MULTIPLIER MODE
A15AI 37 TO 370MC MULTIPLIER BOARD



REFERENCE DESIGNATION

| NO PREFIX | A15 | CL |
|--------------|------|----------------------|
| | CI-4 | CL |
| FL3 | J1,2 | CL |
| W7D, WBC | | LI DI RI TI |



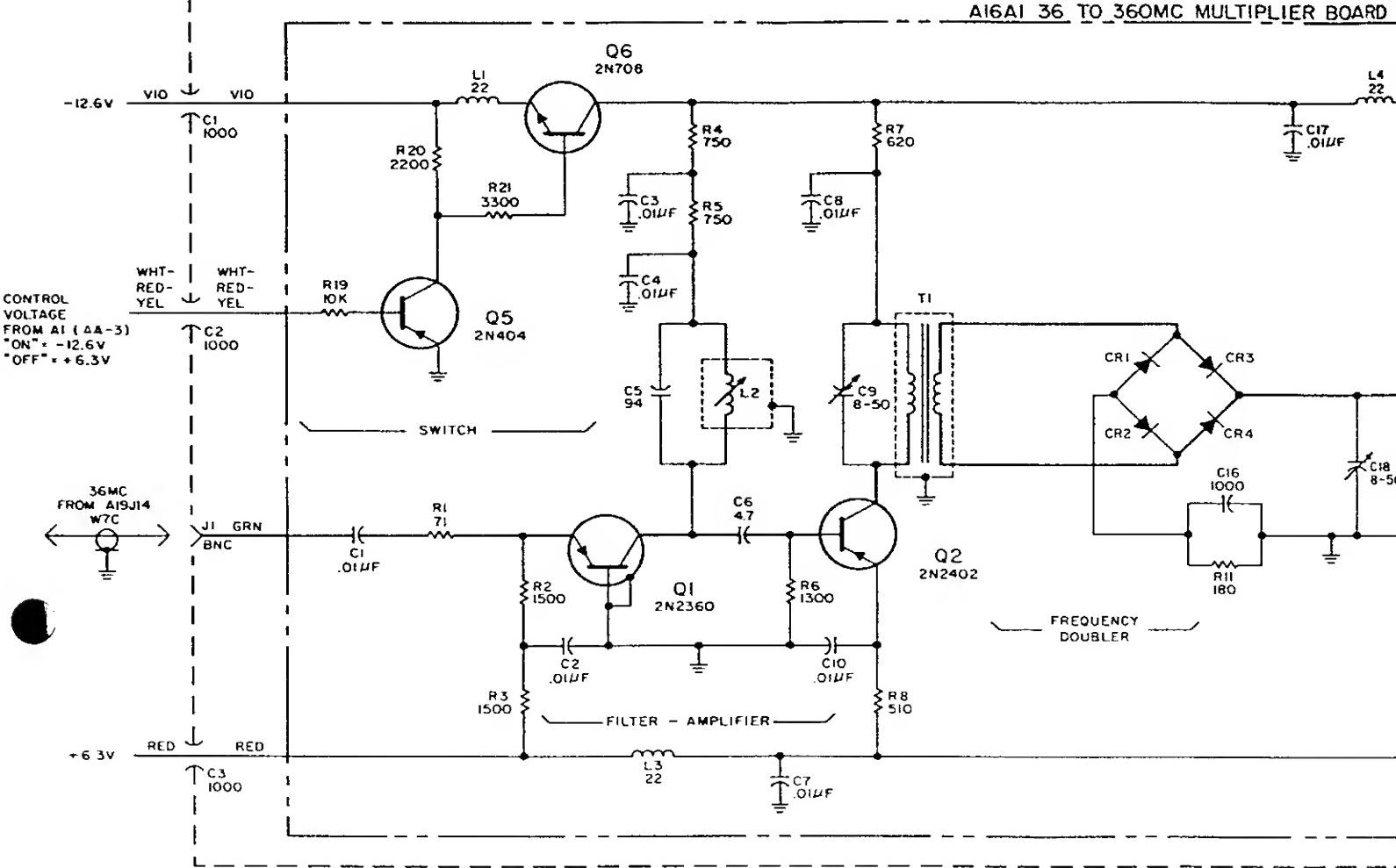
DESIGNATIONS

| | |
|----|--|
| 15 | A15A1 |
| 16 | C1-10, 16-25 CR1-6 L1-9 Q1-6 R1-8, J1-21 T1 |

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00-00-00-4

Figure 5-21. 37 to 370 Mc Multiplier Assembly

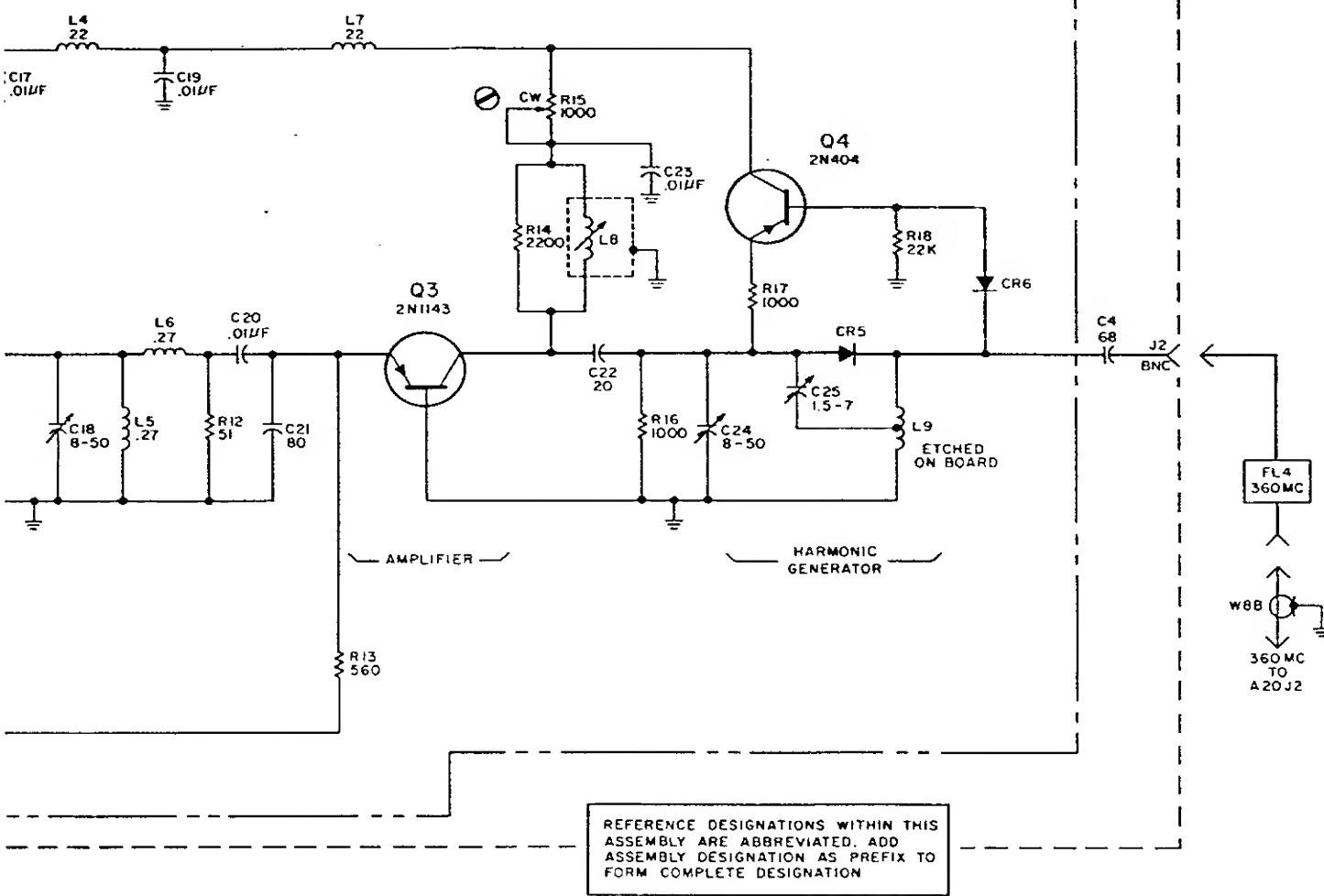


REFERENCE DESIGNATION

NOTES

- I. UNLESS OTHERWISE INDICATED:
 RESISTANCE IN OHMS;
 CAPACITANCE IN PICOFARADS
 INDUCTANCE IN MICROHENRIES

| NO PREFIX | A16 |
|--------------|-------------------|
| FL 4 | C 1 - 4 J 1, 2 |
| | W7C, WBB |



DESIGNATIONS

| A16 | A16A1 |
|-----|--------------------------------------|
| I-4 | C1-10, 16-25 CR1-6 |
| I.2 | L1-9 Q1-6 R1-8, II-21 T1 |

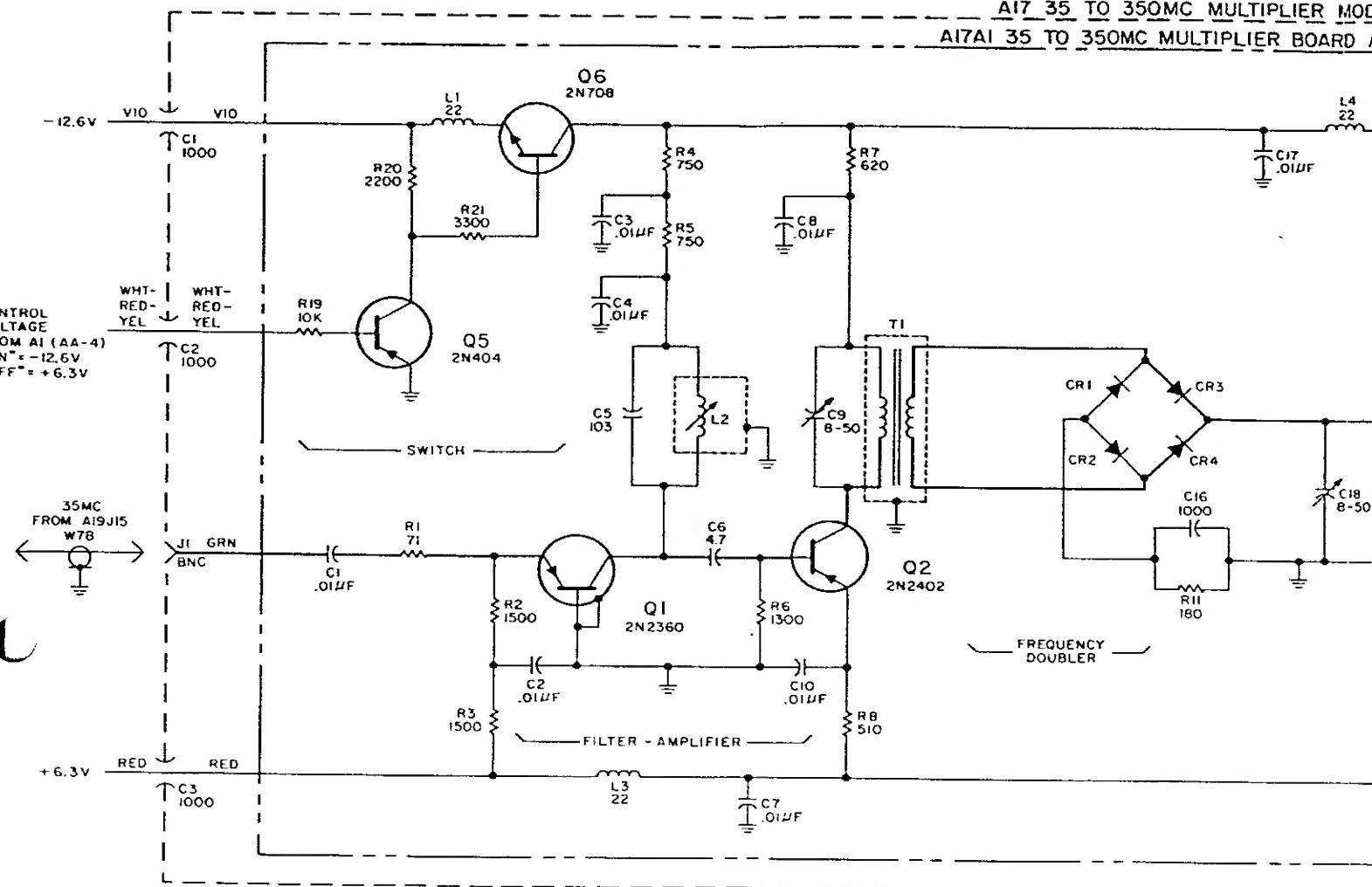
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04/00-0-15

Figure 5-22. 36 to 360 Mc Multiplier A

AI7_35 TO 350MC MULTIPLIER MODE

AI7AI 35 TO 350MC MULTIPLIER BOARD

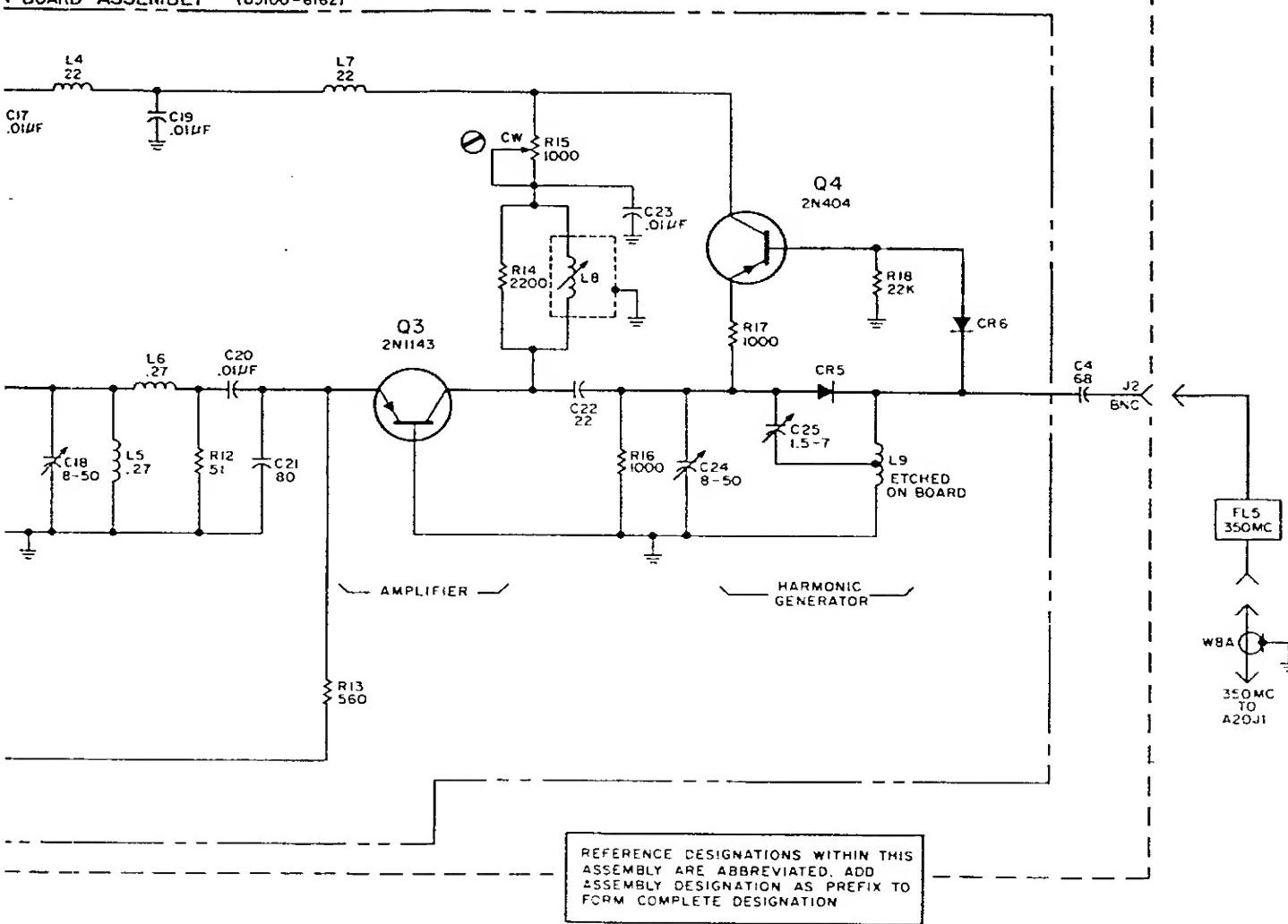


NOTES

- I. UNLESS OTHERWISE INDICATED:
 RESISTANCE IN OHMS;
 CAPACITANCE IN PICOFARADS
 INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATION

| NO PREFIX | A17 | |
|--------------|---------|--------|
| FL 5 | C 1 - 4 | C |
| | J 1, 2 | C R |
| W7B, W8A | L Q R | T |



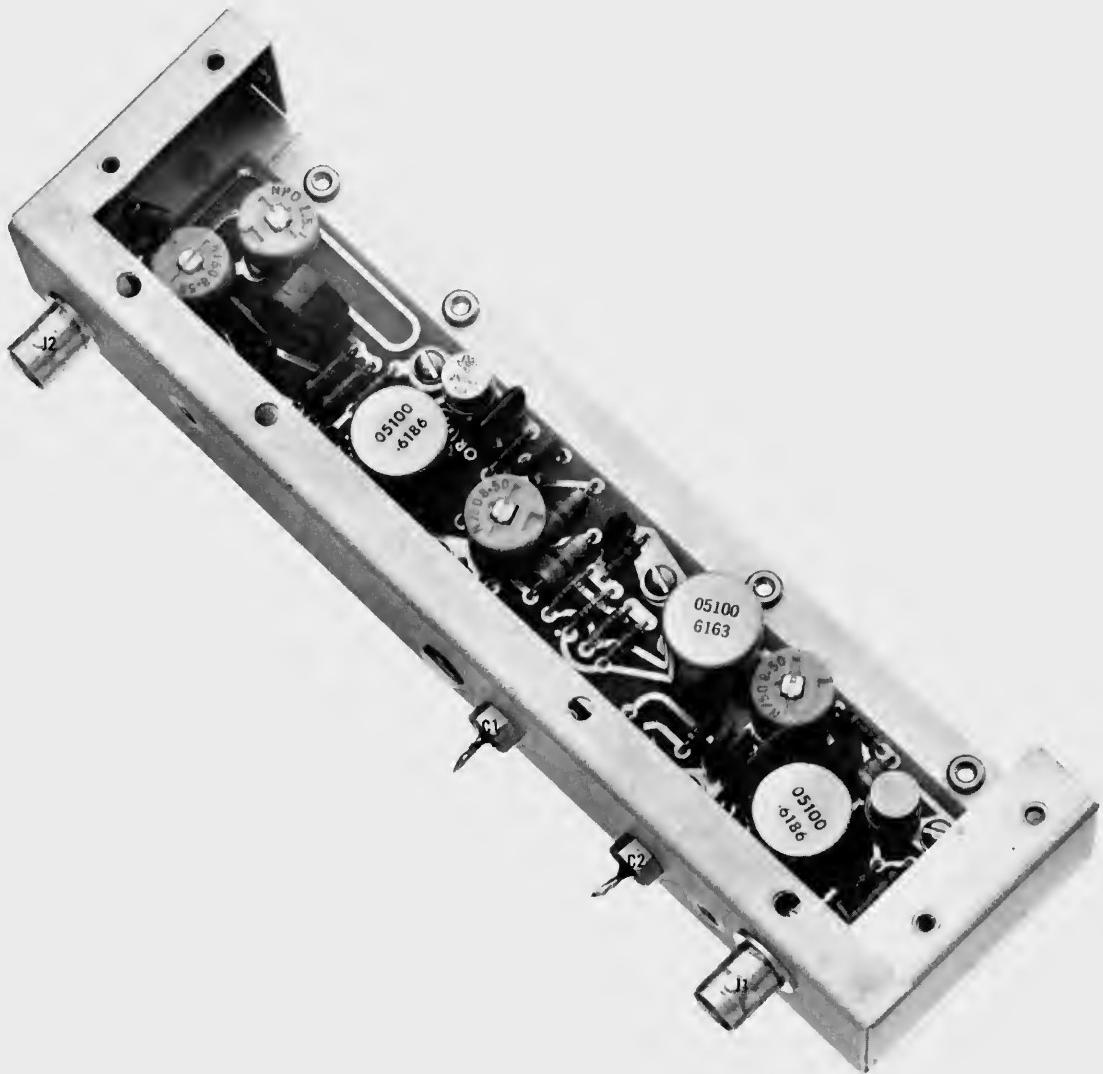
DESIGNATIONS

| A17 | A17A1 |
|-----|--|
| -4 | C1 - 10, L6 - 25 CRI - 6 |
| .2 | L1 - 9 Q1 - 6 R1 - 6, 11 - 21 T1 |

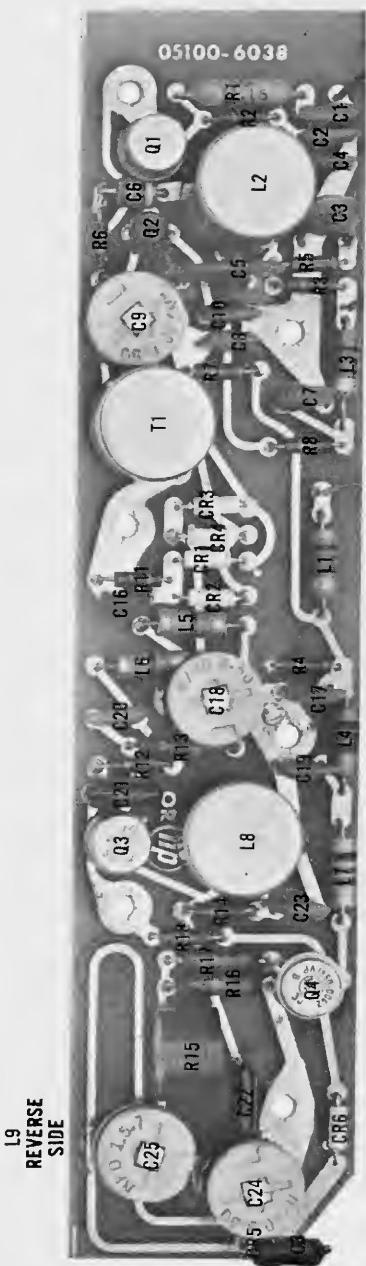
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77-21-2-6

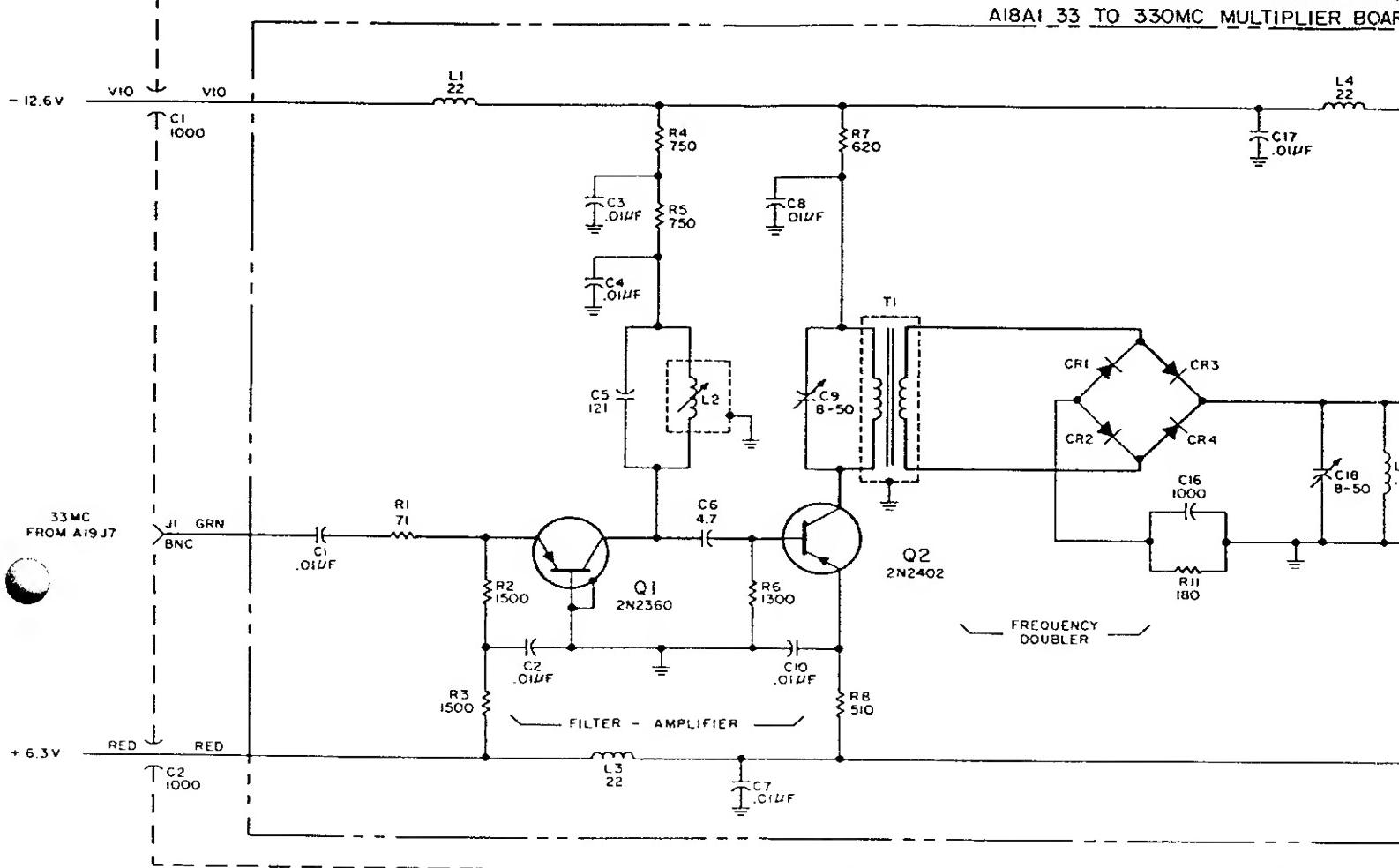
Figure 5-23. 35 to 350 Mc Multiplier A1



A18



A18A1

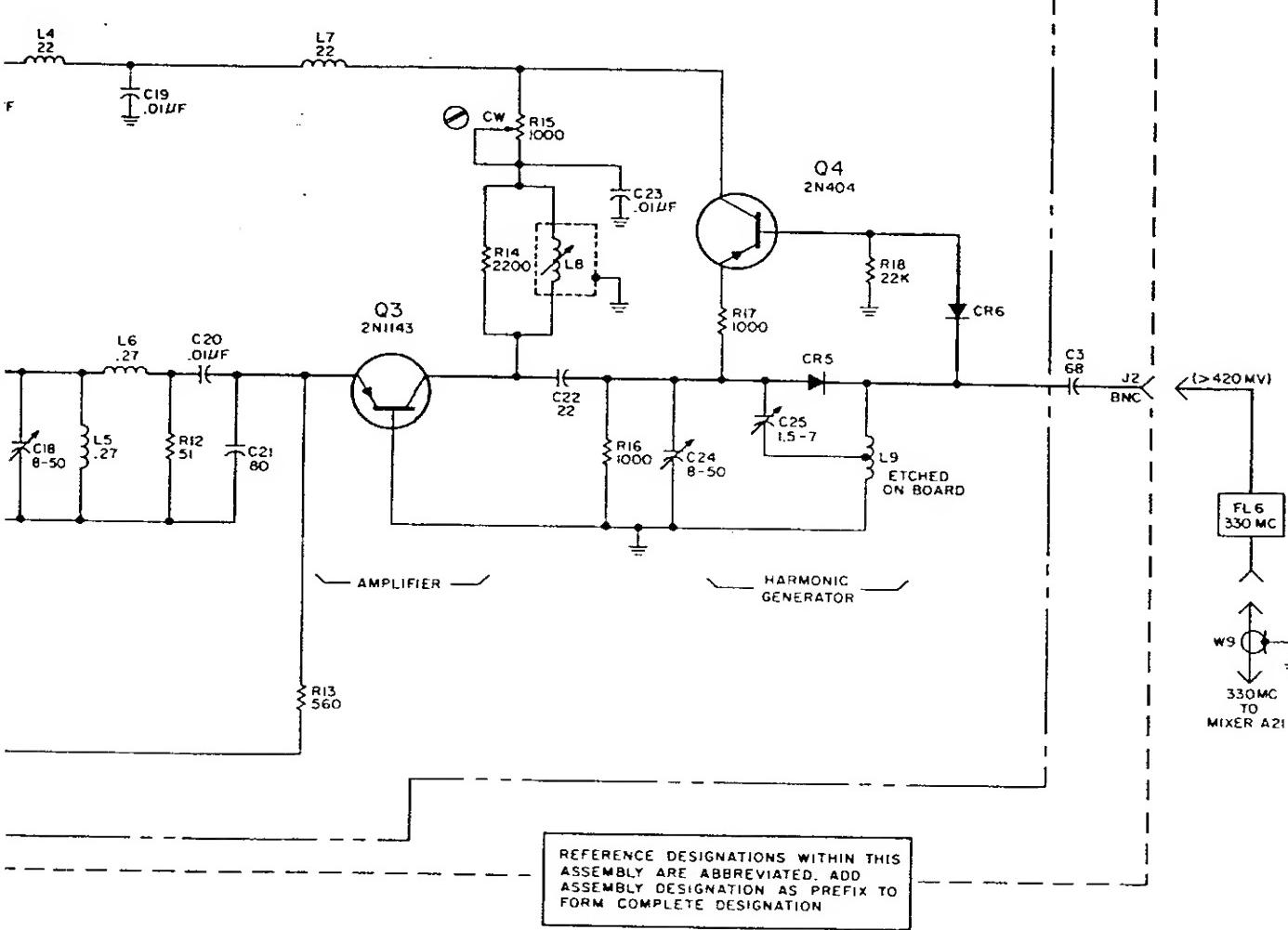


NOTES

UNLESS OTHERWISE INDICATED.
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATION

| NO | PREFIX | A18 |
|------|--------|-----|
| F1.6 | C1-3 | |
| | J1,2 | |
| W9 | | |



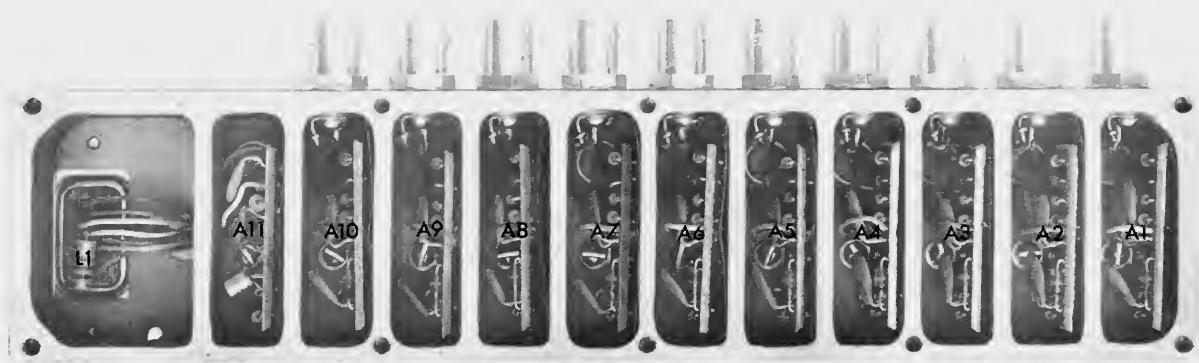
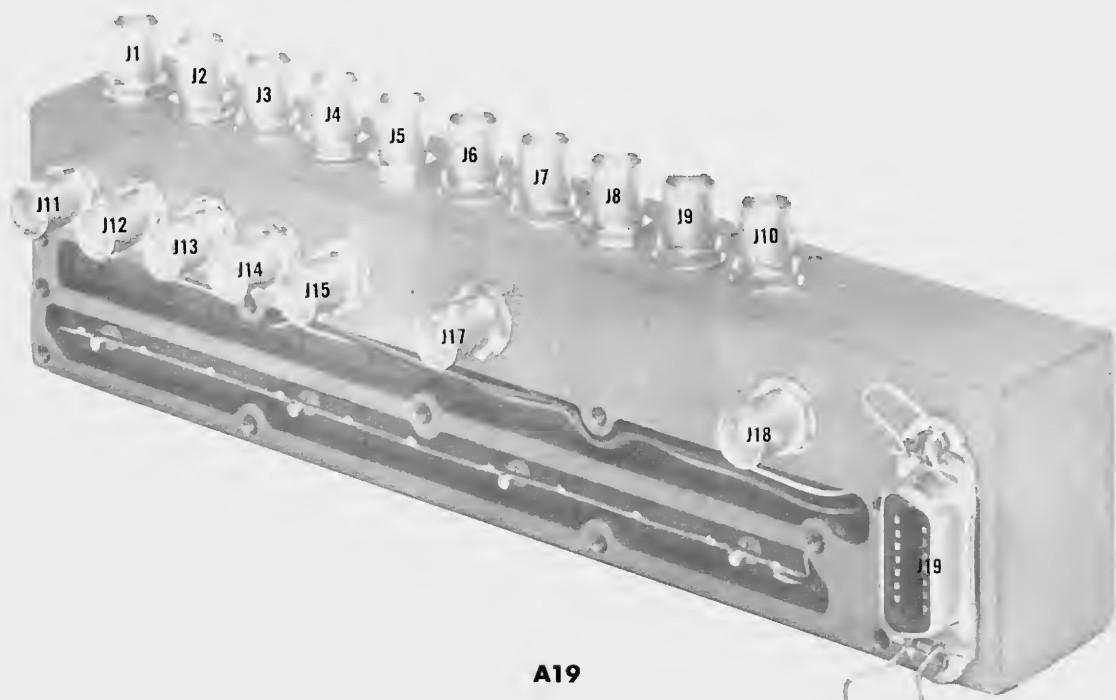
CE DESIGNATIONS

| A18 | A18A1 |
|------|--------------------------------------|
| C1-3 | C1-10, 16-25 CRI-6 |
| J1,2 | L1-9 O1-4 R1-8, II-18 T1 |

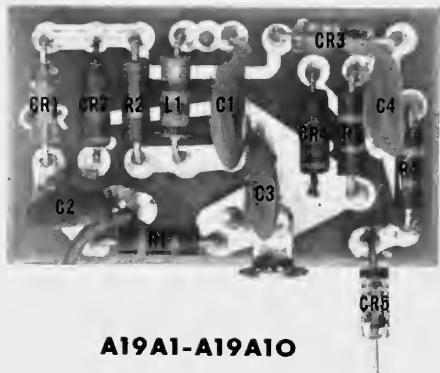
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05:00-D-.7

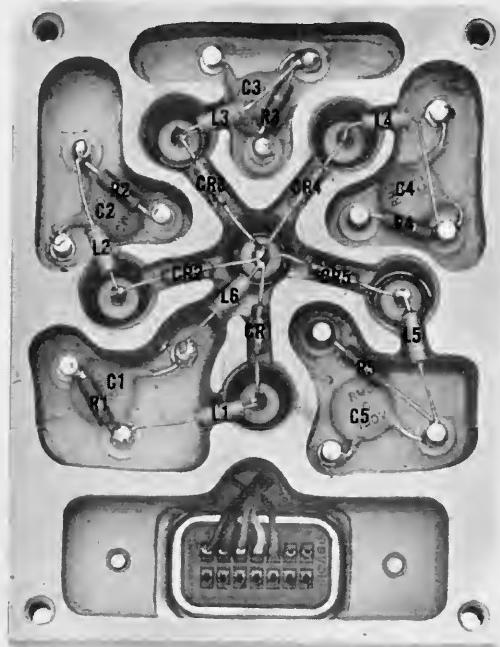
Figure 5-24. 33 to 330 Mc Multiplier A



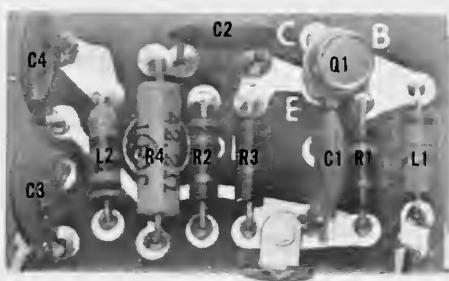
A19



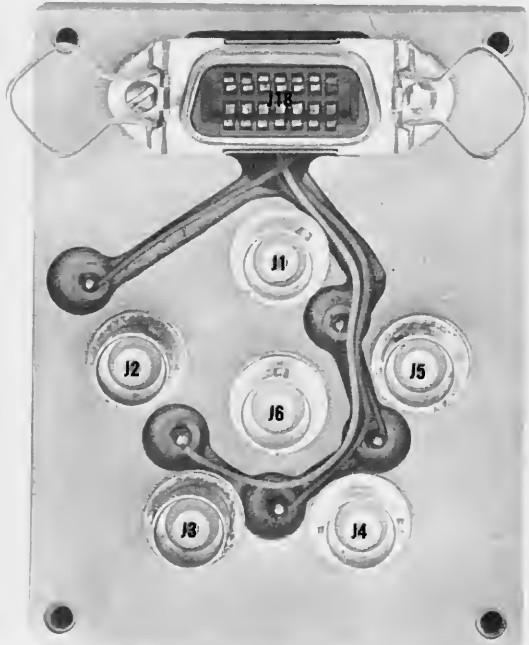
A19A1-A19A10



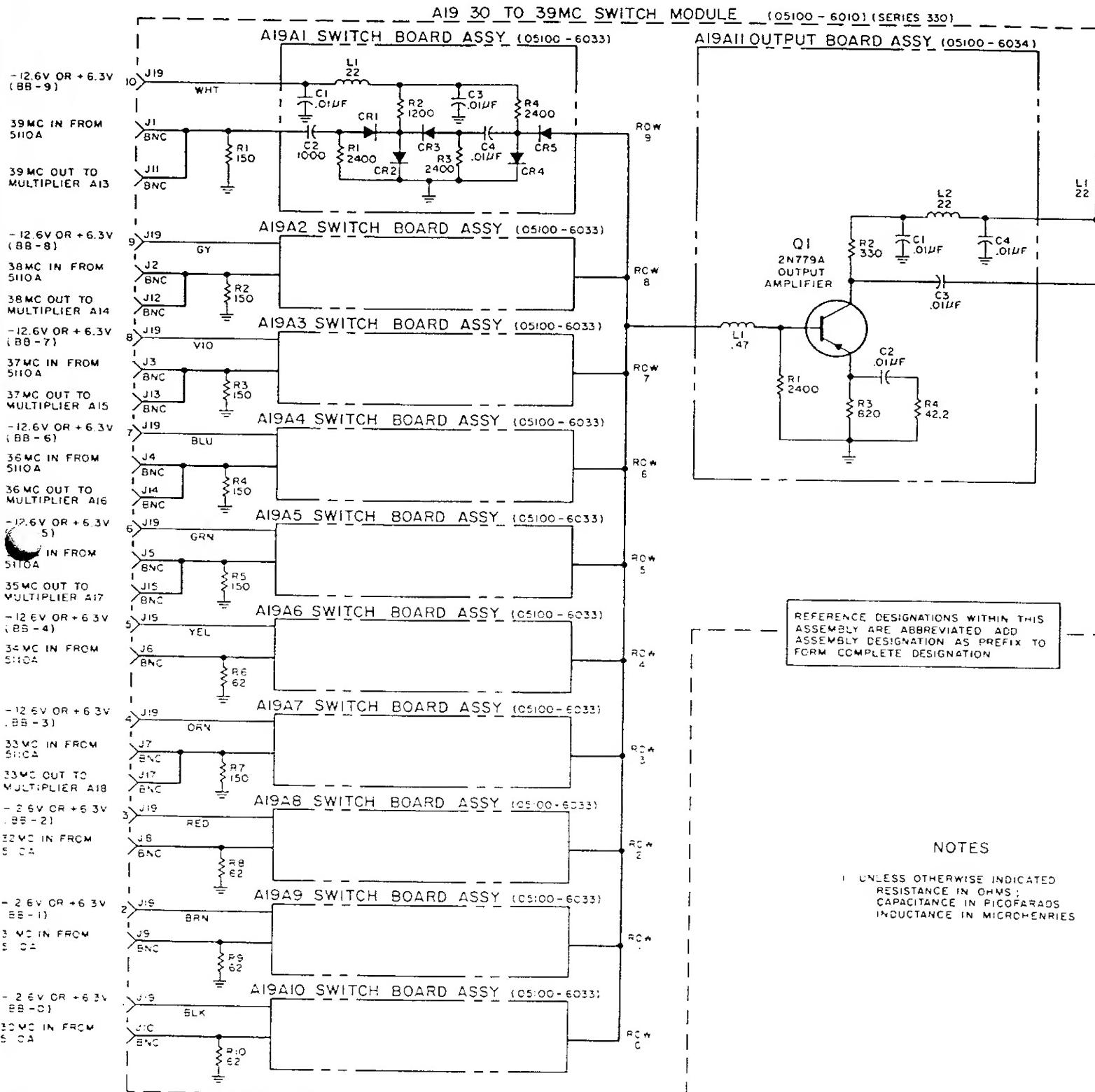
A20



A19A11



A20

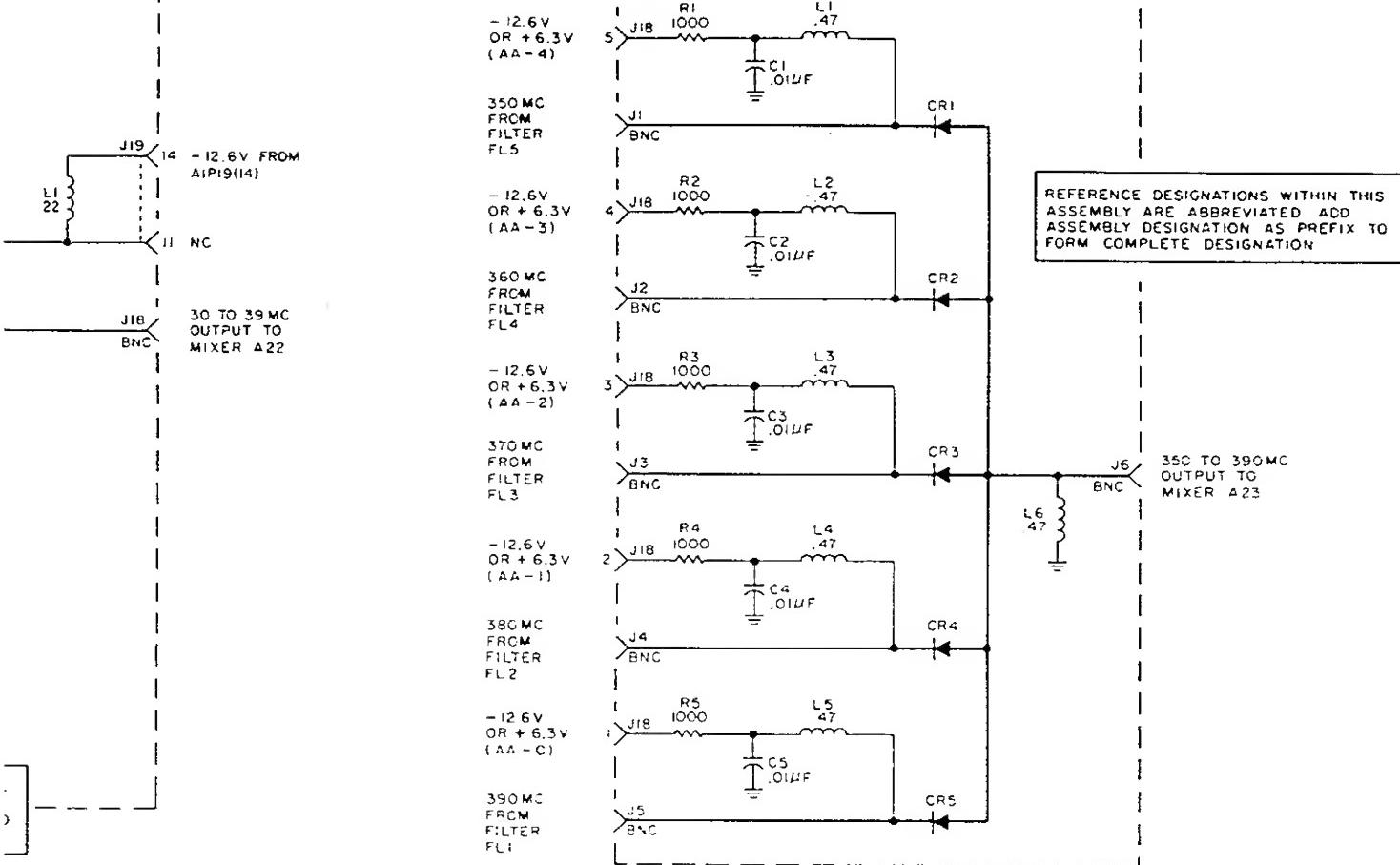


REFERENCE DESIGNATIONS WITHIN THIS ASSEMBLY ARE ABBREVIATED ADD ASSEMBLY DESIGNATION AS PREFIX TO FORM COMPLETE DESIGNATION

NOTES

1 UNLESS OTHERWISE INDICATED
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

A20_350_TO_390MC_SWITCH_MODULE_(05100-6011)(SERIES 330)

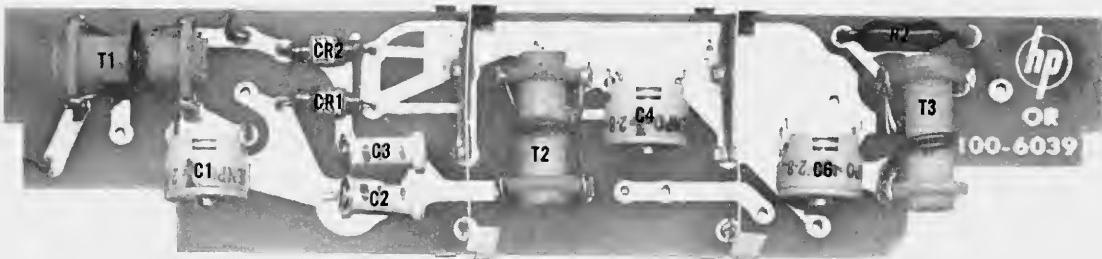


REFERENCE DESIGNATIONS

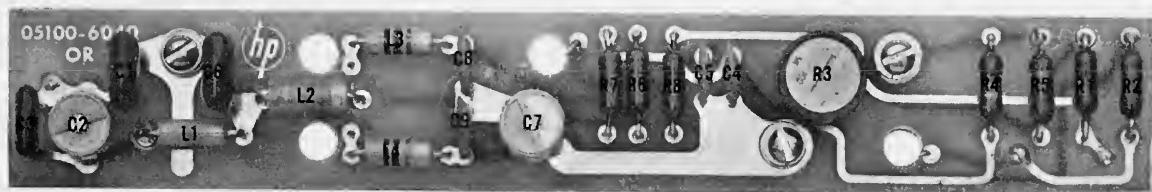
| A19 | A19A1-A10 | A 9AII | A20 |
|---------------------------|-----------------------------------|---------------------------|---|
| J1 - 15, L1 R1 - 10 | C1 - 4 CR1 - 5 L1 R1 - 4 | C1 - 4 L1, Z C1 - 4 | C1 - 5 CR1 - 5 L1 - 6, 18 B1 - 5 |

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Figure 5-25. 30 to 39 Mc Switch
350 to 390 Mc Switch



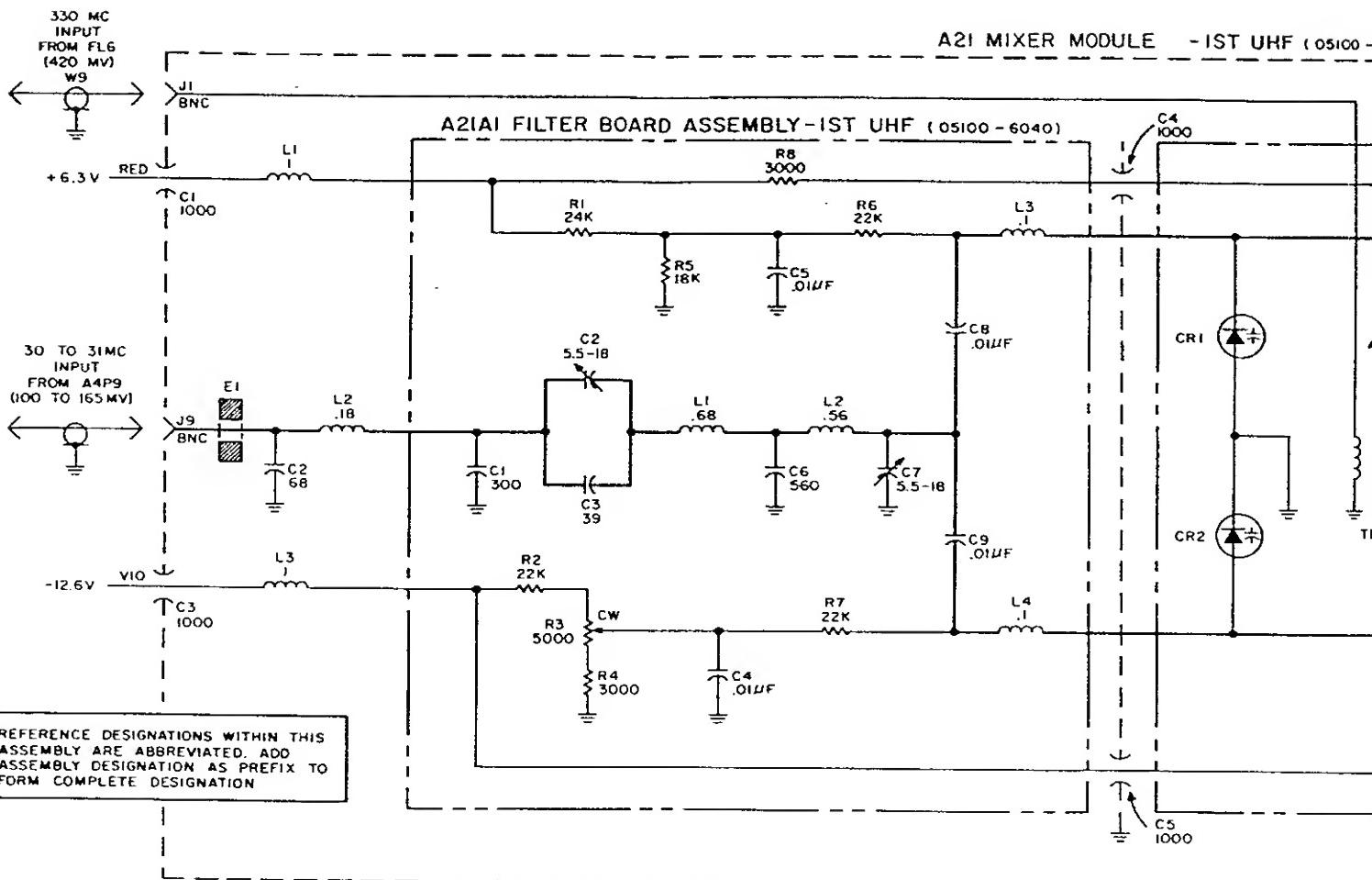
A21A2



A21A1



A21



NOTES

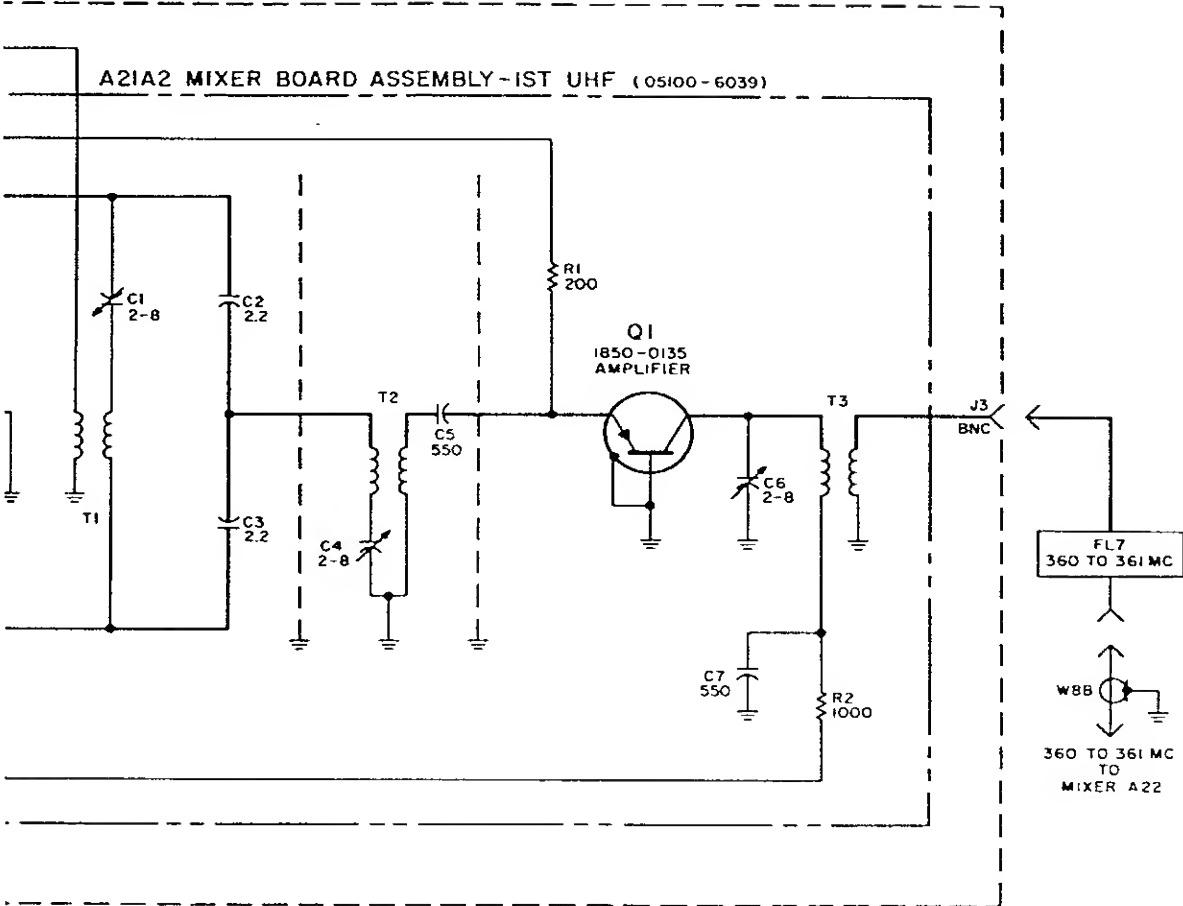
1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

REFERENCE DESIGNATION

| NO PREFIX | A2I | A2IAI |
|--------------|------------------------------|----------------------|
| FL7 | C1-5 EI J1,3,9 LI-3 | C1-9 LI-4 RI-6 |
| W8B, W9 | | |

Section V
Figure 5-26

F (05100 - 6012) (SERIES 401)



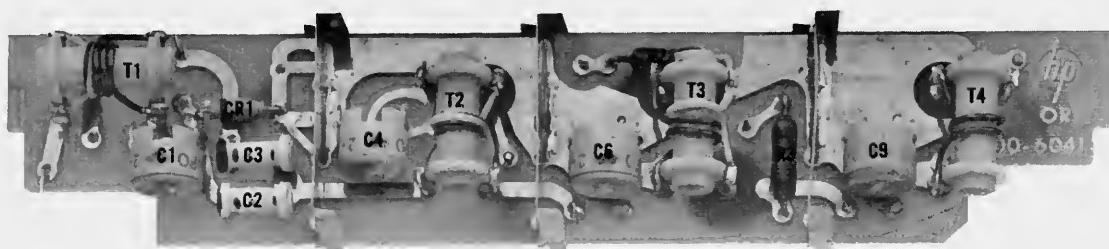
DESIGNATIONS

| A21A1 | A21A2 |
|--------|-----------------|
| C1 - 9 | C1 - 7 CR1,2 |
| L1 - 4 | Q1 |
| R1 - 8 | R1,2 T1 - 3 |

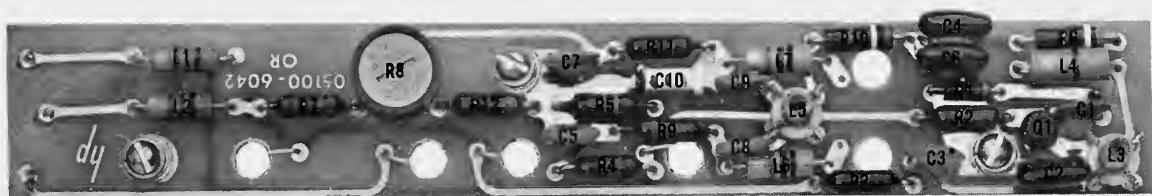
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05100 - D - 19

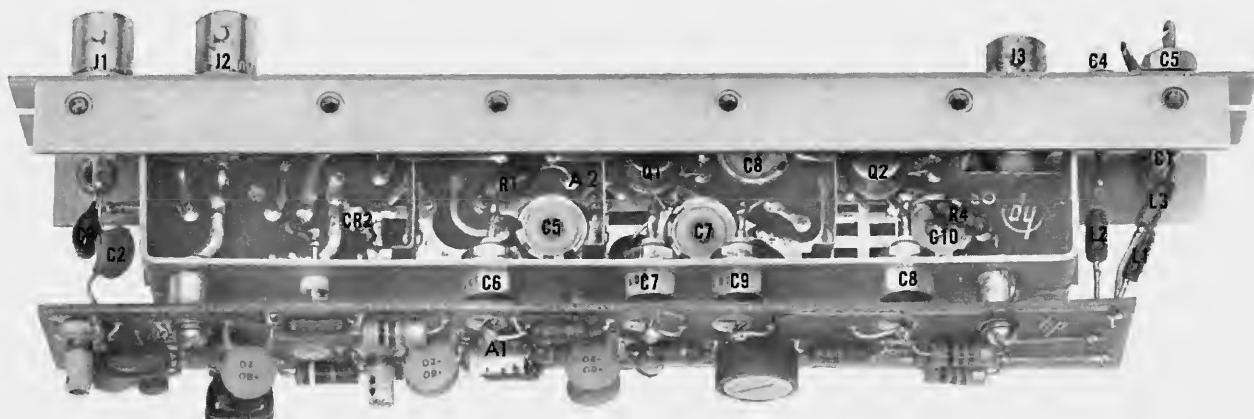
Figure 5-26. 1st UHF Mixer A21



A22A2



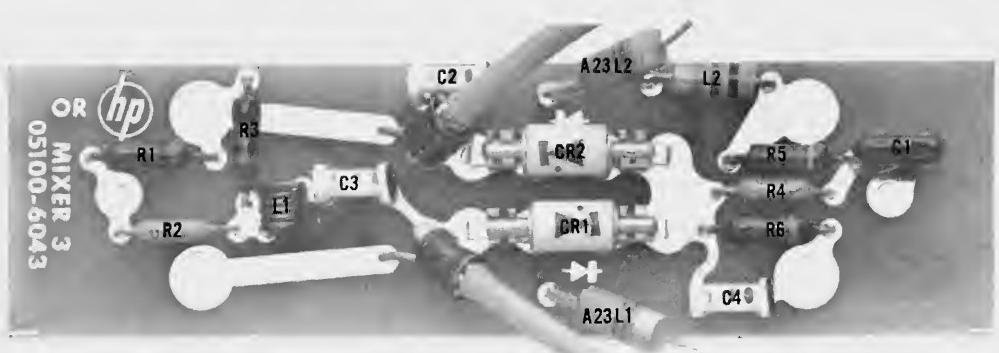
A22A1



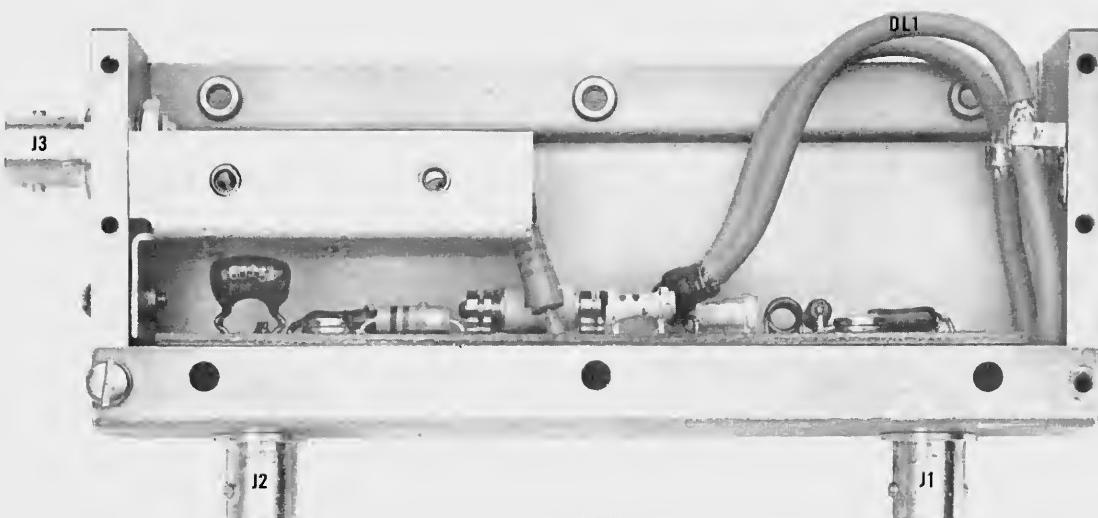
A22



A23A2



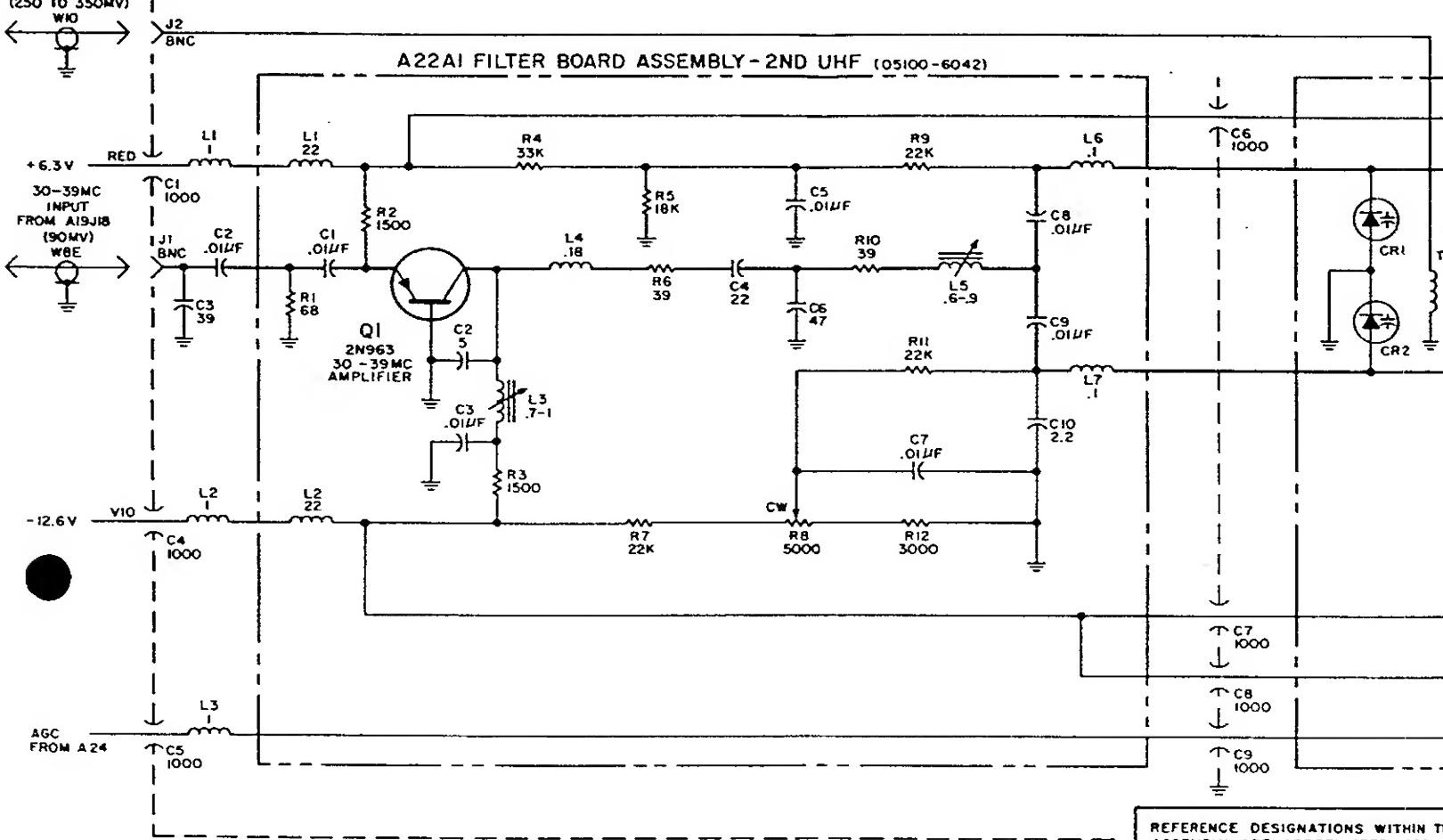
A23A1



A23

360-361 MC
INPUT
FROM FL7
(250 TO 350MV)

A22 MIXER MODULE - 2ND UHF (



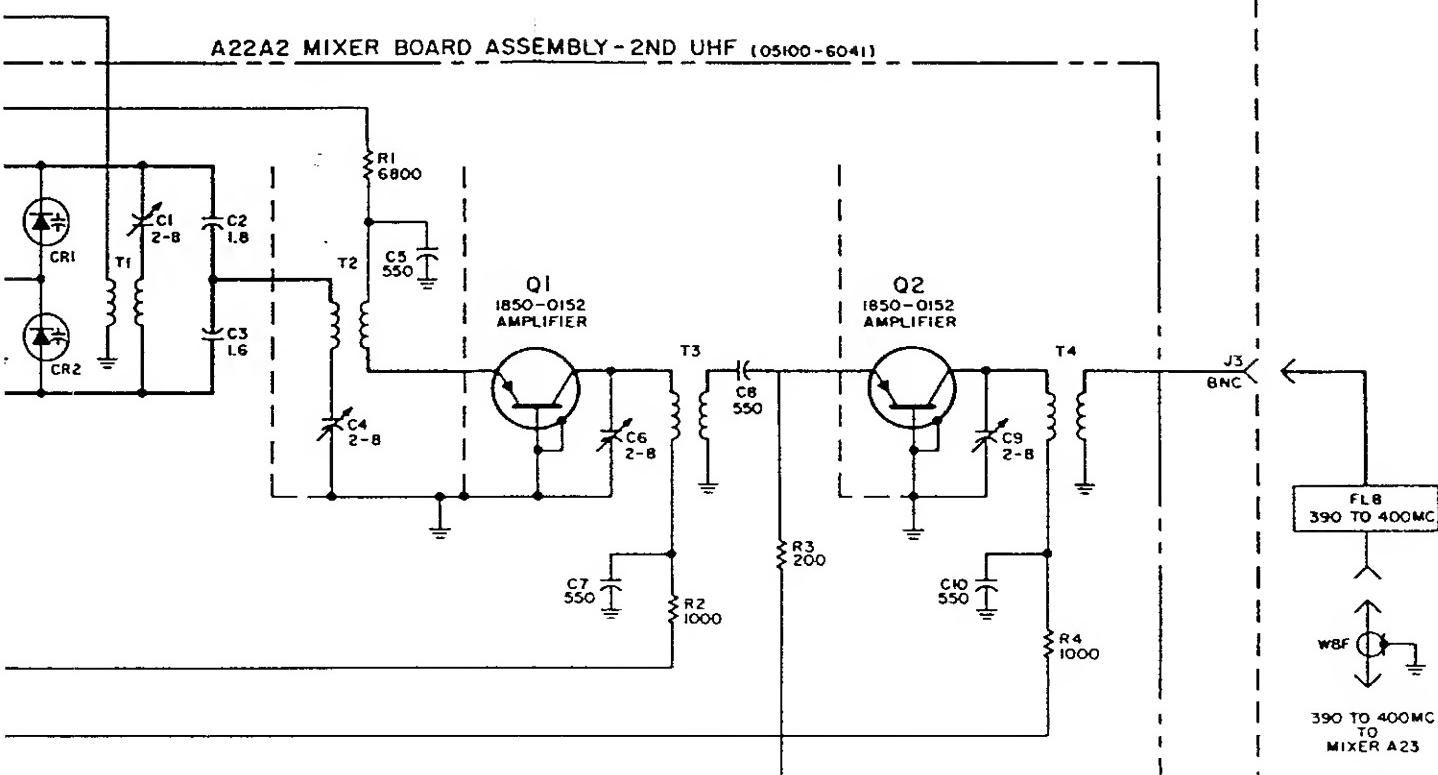
REFERENCE DESIGNATIONS WITHIN THE ASSEMBLY ARE ABBREVIATED. ADD ASSEMBLY DESIGNATION AS PREFIX FORM COMPLETE DESIGNATION

NOTES

- I. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

| NO PREFIX | A22 | A22A1 | |
|--------------|----------------------|------------------------------|-------------|
| F18 | C1-9 J1-3 L1-3 | C1-10 L1-7 Q1 R1-12 | C C |
| W8E, 8F, 10 | | | Q R T |

A22A2 MIXER BOARD ASSEMBLY - 2ND UHF (05100-6041)



ONS WITHIN THIS
VIATED. ADD
N AS PREFIX TO
INATION

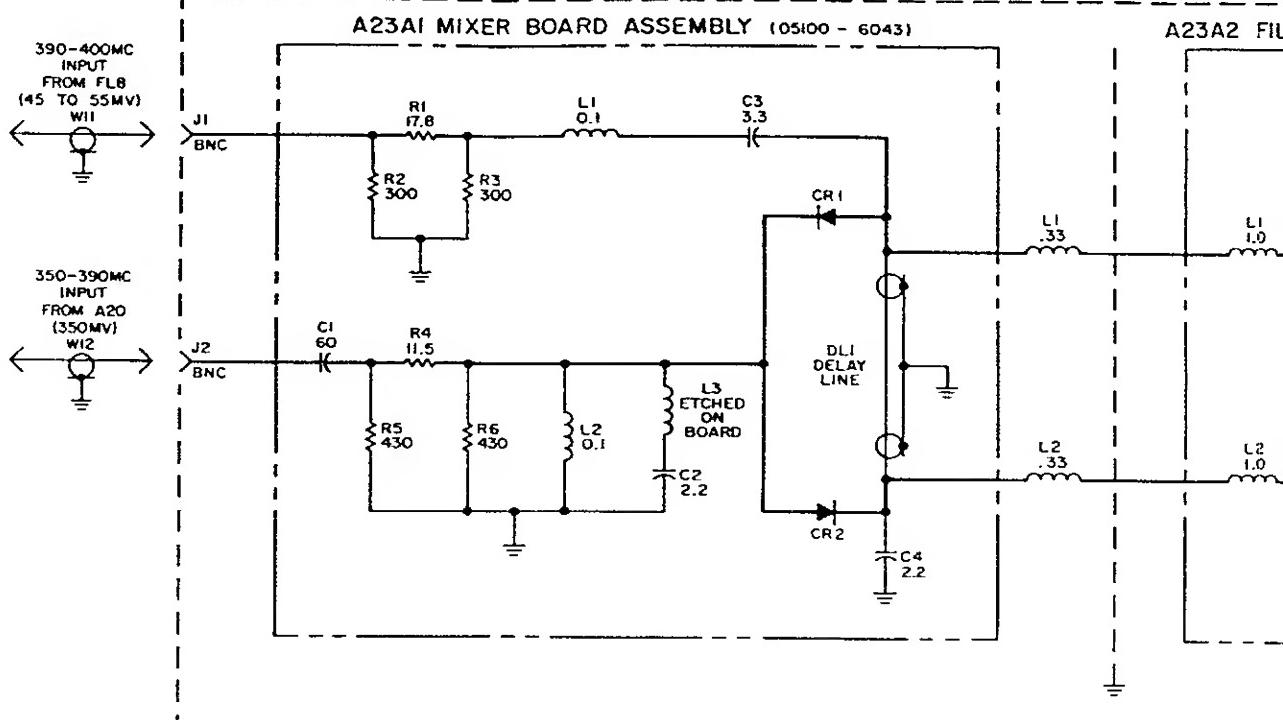
IGNATIONS

| A22A1 | A22A2 |
|---------|------------------|
| C1 - IO | C1 - IO CR1,2 |
| I - 7 | |
| II | O1,2 |
| II - 12 | R1 - 4 T1 - 4 |

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C51CC - D - 2

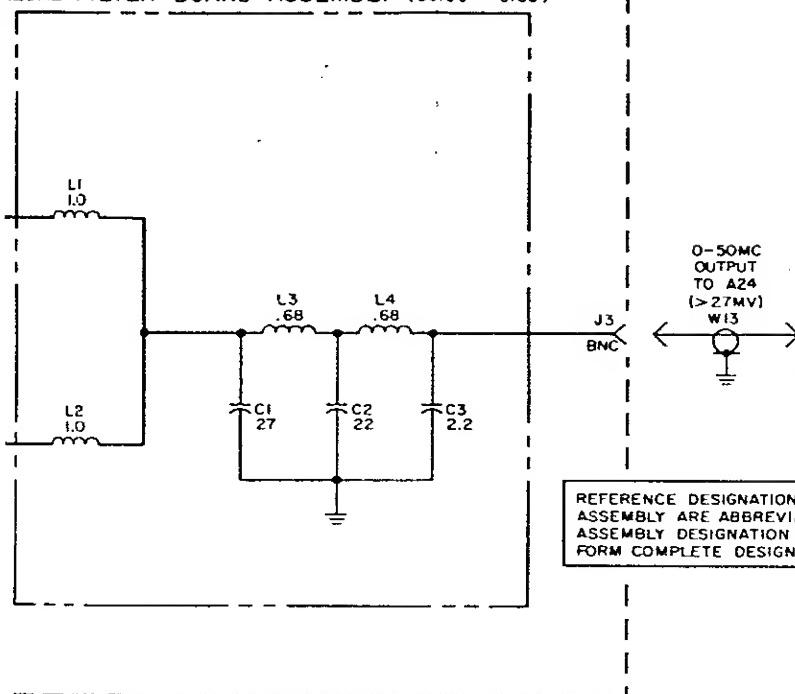
Figure 5-27. 2nd UHF Mixer

**REFERENCE DESIGNATIONS****NOTES**

1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES

| NO PREFIX | A23 | A23AI | A23A2 |
|--------------|------------------|--|------------------|
| W11-13 | J1 - 3 L1 - 2 | C1 - 4 CR1,2 DL1 L1 - 3 RI - 6 | C1 - 3 L1 - 4 |

A23A2 FILTER BOARD ASSEMBLY (05100 - 6165)



NS

A23A2

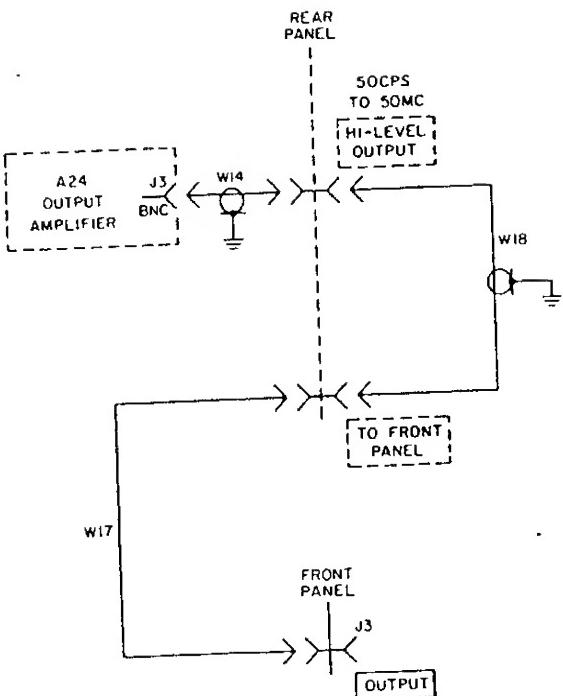
C1-3

LI-4

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05:00 - D - 21

Figure 5-28. 3rd UHF Mixer A23



NOTES

1. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS
INDUCTANCE IN MICROHENRIES
2. ASTERISK (*) INDICATES
SELECTED COMPONENT,
AVERAGE VALUES SHOWN

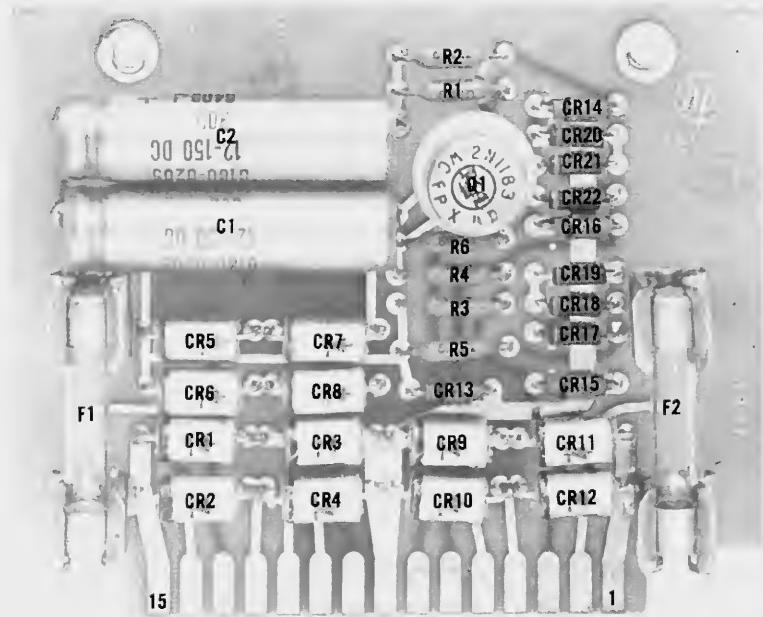
REFERENCE DESIGNATIONS

| A24 | A24AI |
|------|--|
| C1-8 | C1-14, 21-33, 41-45 CR1-9 |
| J1-3 | L1-8 O1-11 R1-16, 21-32, 41-61 |

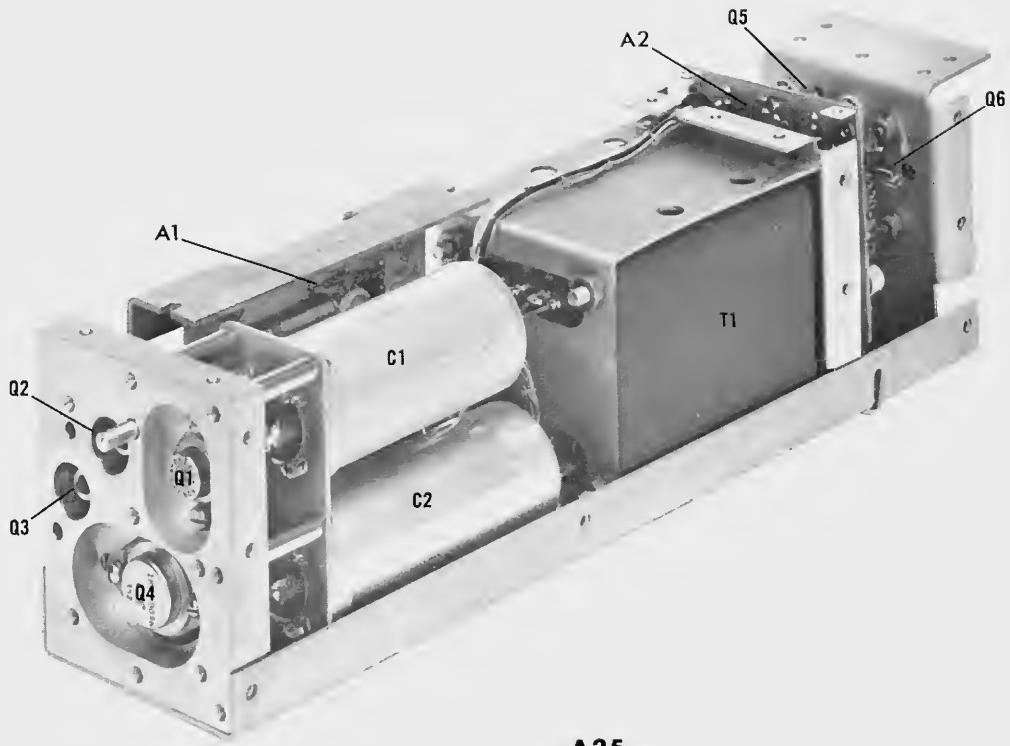
05100-0-22



A24



A25A1



A25

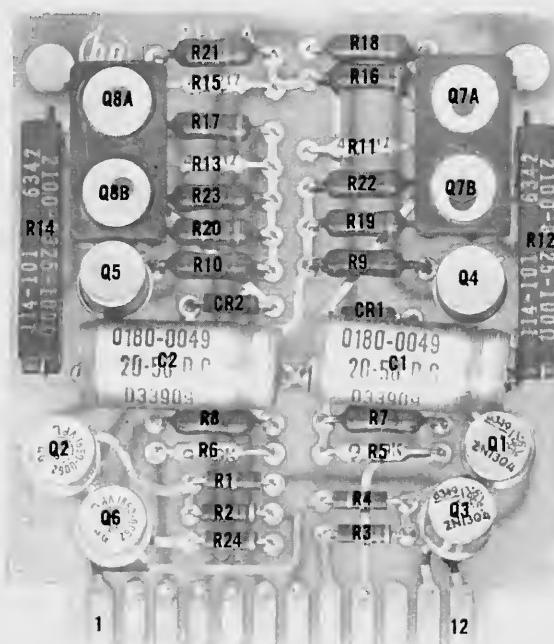
NOTES

I. UNLESS OTHERWISE INDICATED:
RESISTANCE IN OHMS;
CAPACITANCE IN PICOFARADS

REFERENCE DESIGNATIONS

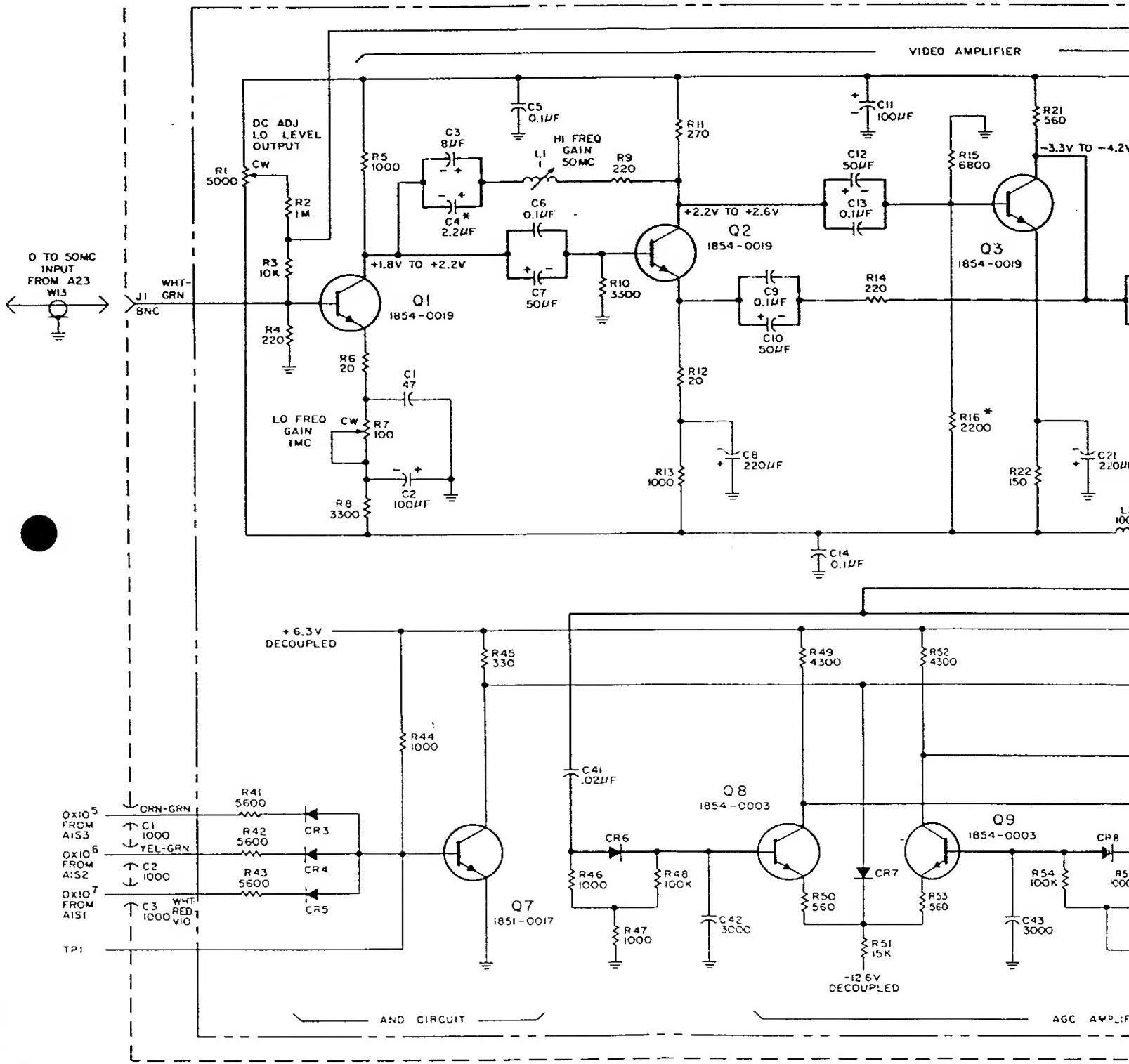
| NO PREFIX | A25 | A25A1 | A25A2 | A25A3 | A25A4 |
|--------------|----------------------|----------------|---------------|-------|-------|
| DSI | C1 - 4 | C1,2 CR1-22 | C1,2 CR1,2 | C1 | C1 |
| FI | | FI,2 | | L1 | L1 |
| J12,I3,I4 | | | | | |
| RI | P2,3 Q1-6 RI,2 | Q1 RI-6 | Q1-8 RI-24 | | |
| S4,5 | | | | | |
| WI | T1 | | | | |

05100-D-24



A25A2

A24 OUTPUT AMPLIFIER MODULE



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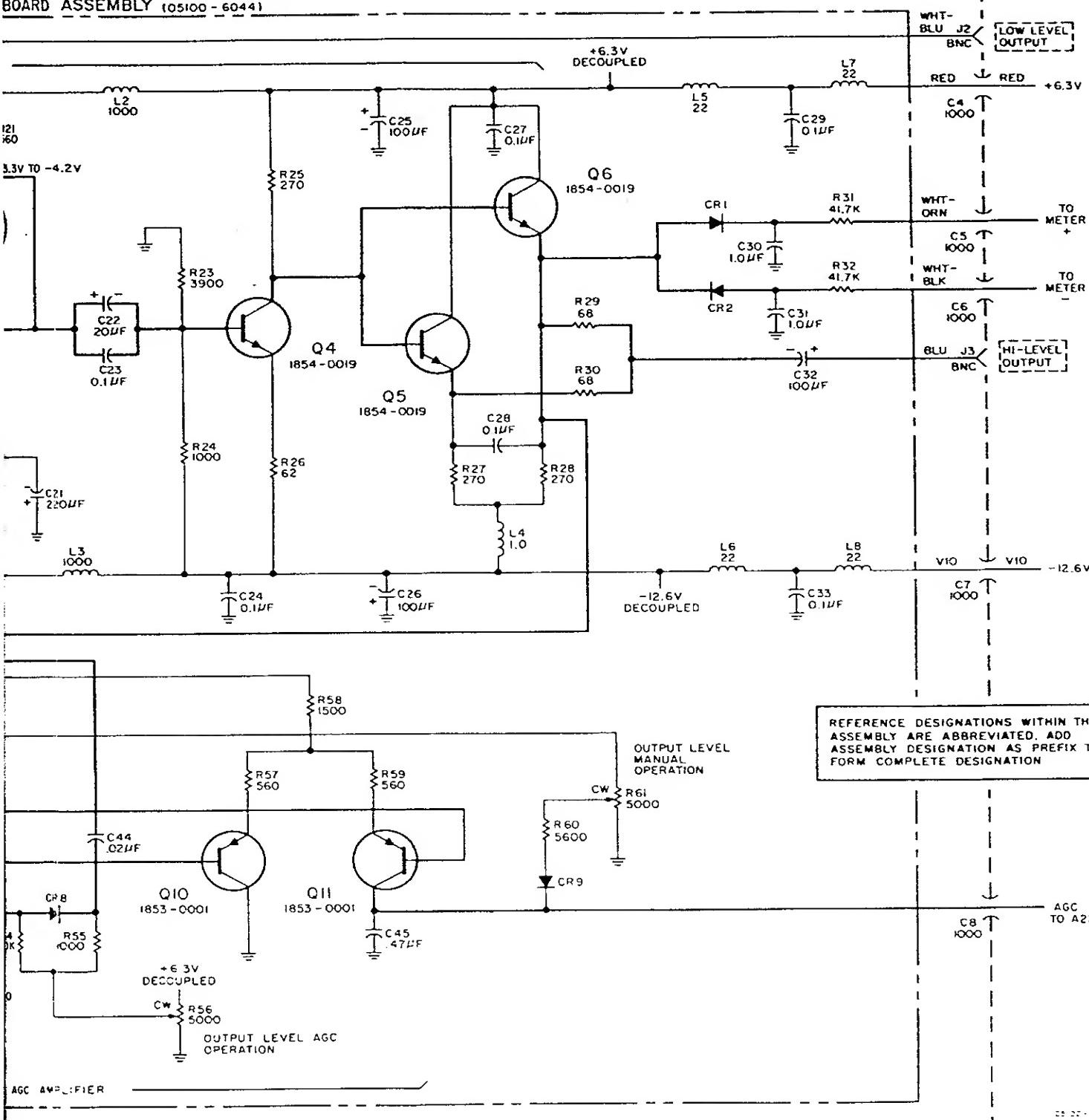
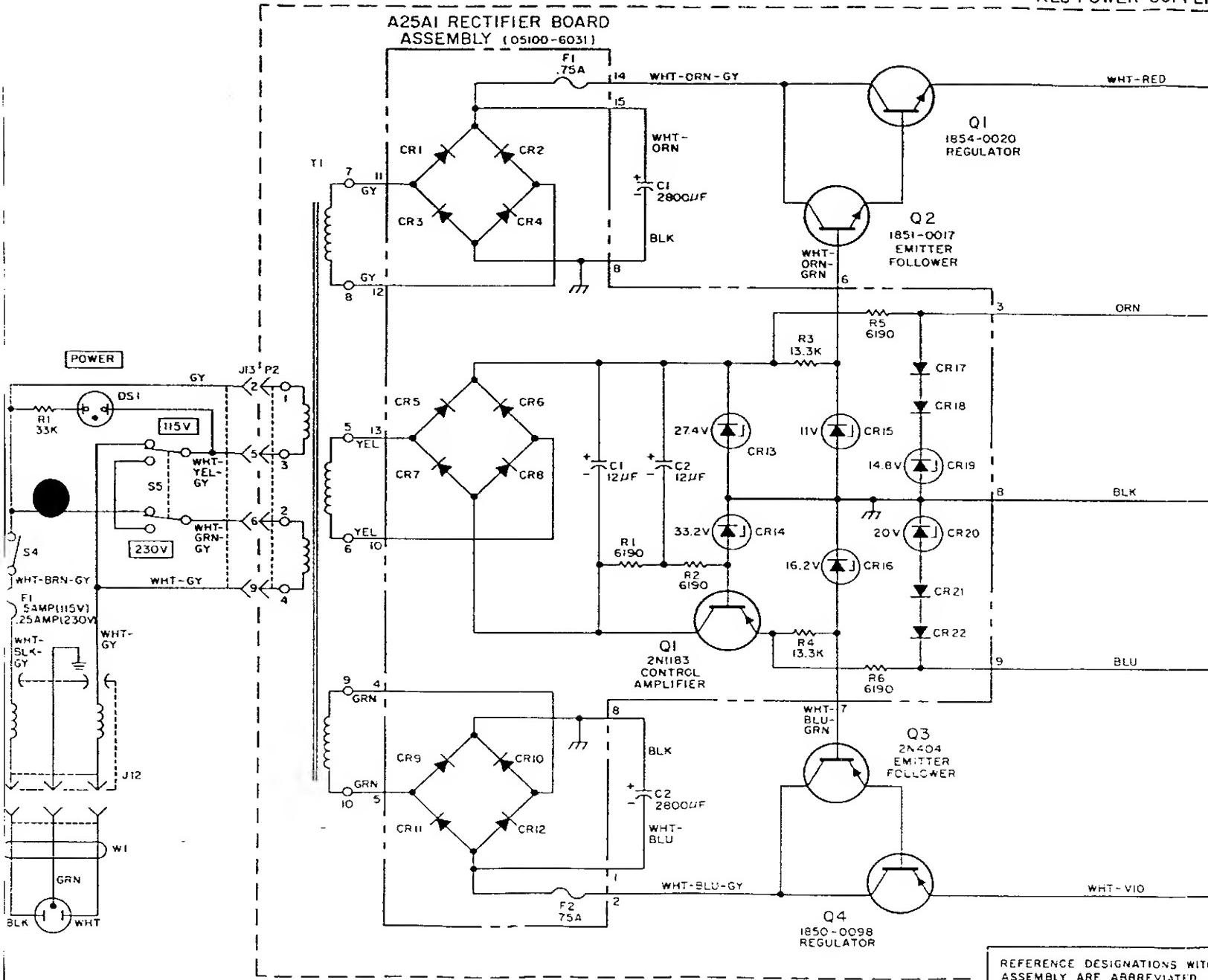
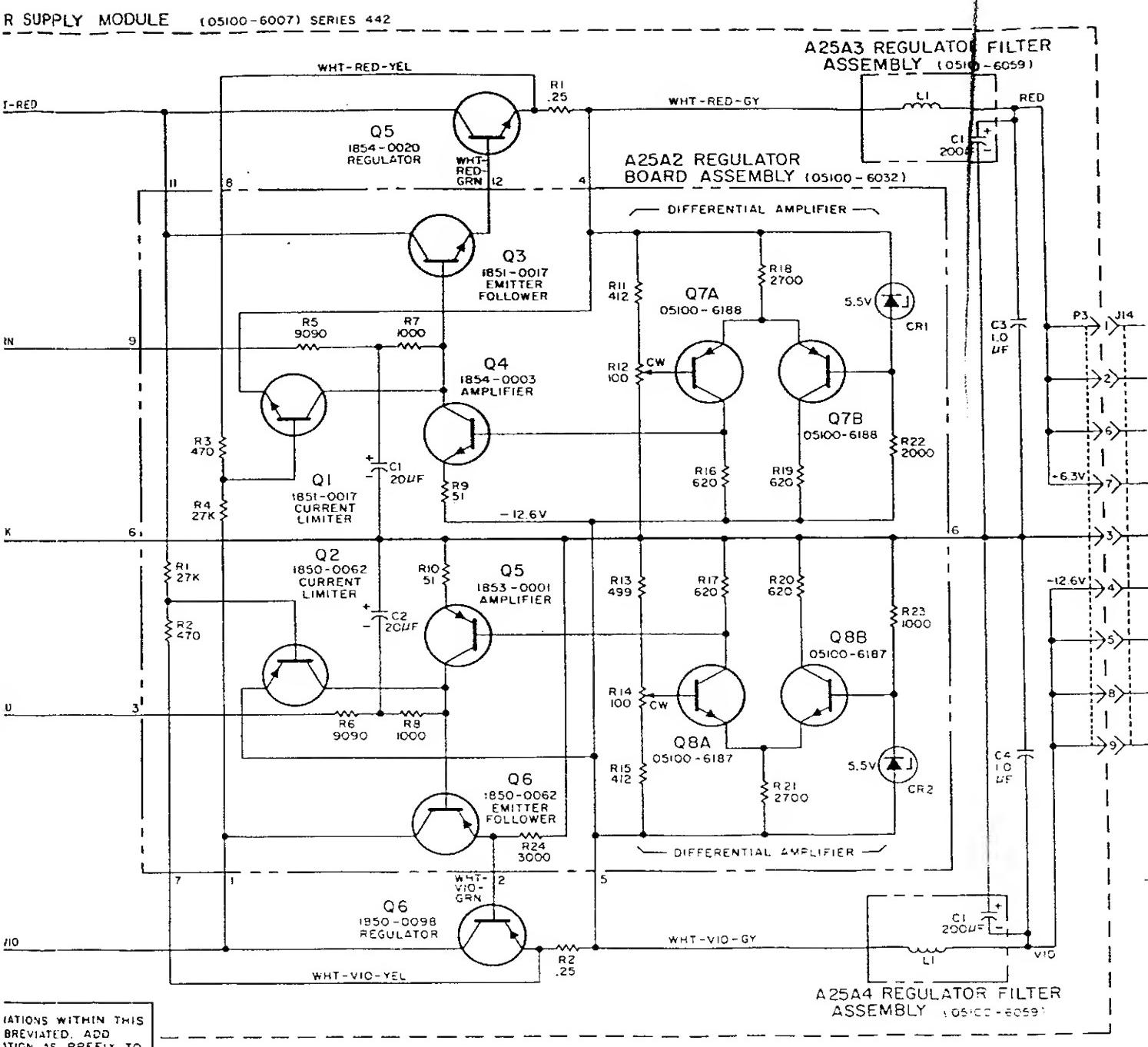


Figure 5-29. Output Amplifier



REFERENCE DESIGNATIONS WITHIN
ASSEMBLY ARE ABBREVIATED.
ASSEMBLY DESIGNATION AS PER
FORM COMPLETE DESIGNATION



ATIONS WITHIN THIS
BREVIALED. ADD
TION AS PREFIX TO
DESIGNATON

SECTION VI

REPLACEABLE PARTS

6-1. INTRODUCTION.

6-2. This section contains information for ordering replacement parts. Table 6-1 through 6-20 lists parts in alpha-numerical order of their reference designators and indicates the description and stock number of each part, together with any applicable notes. Table 6-21 lists parts in alpha-numerical order of stock number and provides the following information on each part:

- a. Description of the part (see list of abbreviations below).
- b. Typical manufacturer of the part in a five-digit code; see list of manufacturers in Table 6-22.
- c. Manufacturer's part number.
- d. Total quantity used in the instrument (TQ column).

6-3. Miscellaneous parts are listed at the end of Tables 6-1 through 6-20.

6-4. ORDERING INFORMATION.

6-5. To obtain replacement parts, address order or inquiry to your local Hewlett-Packard Field Office (see lists at rear of this manual for addresses). Identify parts by their Hewlett-Packard stock numbers.

6-6. To obtain a part that is not listed, include:

- a. Instrument model number.
- b. Instrument serial number.
- c. Description of the part.
- d. Function and location of the part.

REFERENCE DESIGNATORS

| | | | | | | | |
|----|---------------------------|----|------------------------|----|-------------------|----|--|
| A | = assembly | E | = misc electronic part | MP | = mechanical part | TB | = terminal board |
| B | = motor | F | = fuse | P | = plug | TP | = test point |
| BT | = battery | FL | = filter | Q | = transistor | V | = vacuum, tube, neon bulb, photocell, etc. |
| C | = capacitor | J | = jack | R | = resistor | W | = cable |
| CP | = coupler | K | = relay | RT | = thermistor | X | = socket |
| CR | = diode | L | = inductor | S | = switch | Y | = crystal |
| DL | = delay line | M | = meter | T | = transformer | | |
| DS | = device signaling (lamp) | | | | | | |

ABBREVIATIONS

| | | | | | | | |
|----------|-------------------------------|---------|----------------------|--------|---|---------|---------------------------|
| A | = amperes | GE | = germanium | N/C | = normally closed | RMO | = rack mount only |
| A.F.C. | = automatic frequency control | GL | = glass | NE | = neon | RMS | = root-mean square |
| AMPL | = amplifier | GRD | = ground(ed) | NI PL | = nickel plate | RWV | = reverse working voltage |
| B, F. O. | = beat frequency oscillator | H | = beryllies | N/O | = normally open | S-B | = slow-blow |
| BE CU | = beryllium copper | HEX | = hexagonal | NPO | = negative positive zero (zero temperature coefficient) | SCR | = screw |
| BH | = binder head | HG | = mercury | NRFR | = not recommended for field replacement | SE | = selenium |
| BP | = bandpass | HR | = hour(s) | NSR | = not separately replaceable | SECT | = section(s) |
| BRS | = brass | IF | = intermediate freq | OBD | = order by description | SEMICON | = semiconductor |
| BWO | = backward wave oscillator | IMPG | = impregnated | OH | = oval head | SI | = silicon |
| CCW | = counter-clockwise | INCD | = incandescent | OX | = oxide | SIL | = silver |
| CER | = ceramic | INCL | = include(s) | P | = peak | SL | = slide |
| CMO | = cabinet mount only | INS | = insulation(ed) | PC | = printed circuit | SPL | = special |
| COEF | = coefficient | INT | = internal | PF | = picofarads = 10^{-12} farads | SST | = stainless steel |
| COM | = common | K | = kilo = 1000 | PH BRZ | = phosphor bronze | SR | = split ring |
| COMP | = composition | LIN | = linear taper | PHL | = Phillips | STL | = steel |
| CONN | = connector | LK WASH | = lock washer | PIV | = peak inverse voltage | TA | = tantalum |
| CP | = cadmium plate | LOG | = logarithmic taper | P/O | = part of | TD | = time delay |
| CRT | = cathode-ray tube | LPF | = low pass filter | POLY | = polystyrene | TCL | = toggle |
| CW | = clockwise | M | = milli = 10^{-3} | PORC | = porcelain | TI | = titanium |
| DEPC | = deposited carbon | MEG | = meg = 10^6 | POS | = position(s) | TOL | = tolerance |
| DR | = drive | MET FLM | = metal film | POT | = potentiometer | TRIM | = trimmer |
| ELECT | = electrolytic | MET OX | = metallic oxide | PP | = peak-to-peak | TWT | = traveling wave tube |
| ENCAP | = encapsulated | MFR | = manufacturer | PT | = point | U | = micro = 10^{-6} |
| EXT | = external | MINAT | = miniature | PWV | = peak working voltage | VAR | = variable |
| F | = farads | MOM | = momentary | RECT | = rectifier | VDCW | = dc working volts |
| FH | = flat head | MTG | = mounting | RF | = radio frequency | W/ | = with |
| FIL H | = fillister head | MY | = "mylar" | RH | = round head | W | = watts |
| FXD | = fixed | N | = nano (10^{-9}) | RIV | = reverse inverse voltage | WIV | = working inverse voltage |

Table 6-1. Chassis Parts

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|---|------|
| A1 | 05100-6003 | ASSY.- PUSHBUTTON SWITCH | |
| A2 | 05100-6005 | SEARCH OSCILLATOR MODULE | |
| A3 | 05100-6006 | 3-4 MC SWITCH MODULE | |
| A4 | 05100-6004 | CONNECTOR BLOCK MODULE | |
| A5 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A6 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A7 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A8 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A9 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A10 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A11 | 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | |
| A12 | 05100-6002 | MIXER/FILTER MODULE 30-31 MC | |
| A13 | 05100-6016 | 39 TO 390 MC MULTIPLIER MODULE | |
| A14 | 05100-6017 | 38 TO 380 MC MULTIPLIER MODULE | |
| A15 | 05100-6018 | 37 TO 370 MC MULTIPLIER MODULE | |
| A16 | 05100-6019 | 36 TO 360 MC MULTIPLIER MODULE | |
| A17 | 05100-6020 | 35 TO 350 MC MULTIPLIER MODULE | |
| A18 | 05100-6021 | 33 TO 330 MC MULTIPLIER MODULE | |
| A19 | 05100-6010 | 30 TO 39 MC SWITCH MODULE | |
| A20 | 05100-6011 | 350 TO 390 MC SWITCH MODULE | |
| A21 | 05100-6012 | 1ST UHF MIXER MODULE | |
| A22 | 05100-6013 | 2ND UHF MIXER MODULE | |
| A23 | 05100-6014 | 3RD UHF MIXER MODULE | |
| A24 | 05100-6015 | OUTPUT AMPLIFIER MODULE | |
| A25 | 05100-6007 | POWER SUPPLY MODULE | |
| DS1 | 1450-0048 | LAMP:NEON | |
| F1 | 2110-0012 | FUSE,CARTRIDGE 1/2 AMP 250 V | |
| F2 | 2110-0004 | FUSE,CARTRIDGE 1/8 AMP 250 V | |
| FL1 | 9110-0059 | FILTER:BANDPASS 390 MC | |
| FL2 | 9110-0058 | FILTER:BANDPASS 380 MC | |
| FL3 | 9110-0057 | FILTER:BANDPASS 370 MC | |
| FL4 | 9110-0056 | FILTER:BANDPASS 360 MC | |
| FL5 | 9110-0055 | FILTER:BANDPASS 350 MC | |
| FL6 | 9110-0054 | FILTER:BANDPASS 330 MC | |
| FL7 | 9110-0056 | FILTER:BANDPASS 360 MC | |
| FL8 | 9110-0060 | FILTER:BANDPASS 395 MC | |
| J1 | 1250-0123 | CONNECTOR:BNC(SEARCH OSC) | |
| J2 | 1250-0140 | PART OF W16 | |
| J3 | 1250-0214 | CONNECTOR:FRONT PANEL | |
| J4 | 1250-0140 | PART OF W17;OUTPUT CABLE | |
| J5 | 1250-0140 | PART OF W14,HI-LEVEL OUT CABLE | |
| J6 | 1250-0140 | PART OF W15,LO-LEVEL OUT CABLE | |
| J7,8,9 | 1251-0087 | PART OF W19,REMOTE CABLE ASSY | |
| J10 | | PART OF W3 | |
| J11 | 1250-0140 | PART OF W2,3 MC INPUT CABLE | |
| J12 | 9110-0086 | FILTER:ELECTRICAL POWER LINE | |
| J13 | 1251-0384 | CONNECTOR:SUBMINIATURE TYPE D (9 CONTACT) | |
| J14 | 1251-0384 | CONNECTOR:SUBMINIATURE TYPE D (9 CONTACT) | |
| M1 | 1120-0152 | MICROAMMETER:100 MICRO AMPERES | |
| R1 | 0687-3331 | R:FXD COMP 33K OHM 10% 1/2W | |
| S1 | 3101-0038 | SWITCH:TOGGLE DPDT 3 AMP 125V | |

See list of abbreviations in introduction to this section

Table 6-1. Chassis Parts Cont'd.

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|---------------------------------------|------|
| S2 | 3101-0038 | SWITCH:TOG DPDT 3 AMP 125 V | |
| S3 | 3100-0500 | SWITCH:ROTARY | |
| | 0370-0112 | KNOB | |
| S4 | 3101-0038 | SWITCH:TOG DPDT 3 AMP 125 V | |
| S5 | 3101-0033 | SWITCH:SLIDE DPDT | |
| W1 | 8120-0078 | CABLE POWER:7.5FT. | |
| W2 | 05100-6118 | ASSY.- 3 MC INPUT CABLE | |
| | | INCLUDES J11 | |
| W3 | 05100-6117 | ASSY.- 24 MC INPUT CABLE | |
| | | INCLUDES J10 | |
| W4 | 05100-6212 | CABLE ASSY.- LO FREQ INTERCONNECT | |
| W4 A | 05100-6190 | CABLE ASSY.- 3.0MC INTER-CONNECT | |
| W4 B | 05100-6191 | CABLE ASSY.- 3.1MC INTER-CONNECT | |
| W4 C | 05100-6192 | CABLE ASSY.- 3.2MC INTER-CONNECT | |
| W4 D | 05100-6193 | CABLE ASSY.- 3.3MC INTER-CONNECT | |
| W4 E | 05100-6194 | CABLE ASSY.- 3.4MC INTER-CONNECT | |
| W4 F | 05100-6195 | CABLE ASSY.- 3.5MC INTER-CONNECT | |
| W4 G | 05100-6196 | CABLE ASSY.- 3.6MC INTER-CONNECT | |
| W4 H | 05100-6197 | CABLE ASSY.- 3.7MC INTER-CONNECT | |
| W4 I | 05100-6198 | CABLE ASSY.- 3.8MC INTER-CONNECT | |
| W4 J | 05100-6199 | CABLE ASSY.- 3.9MC INTER-CONNECT | |
| W4 K | 05100-6210 | CABLE ASSY.- 24MC INTER-CONNECT | |
| W4 L | 05100-6211 | CABLE ASSY.- INITIAL 3MC INTERCONNECT | |
| W5 | 05100-6213 | CABLE ASSY.- HI FREQ. INTERCONNECT | |
| W5 A | 05100-6200 | CABLE ASSY.- 30 MC INTER-CONNECT | |
| W5 B | 05100-6201 | CABLE ASSY.- 31 MC INTER-CONNECT | |
| W5 C | 05100-6202 | CABLE ASSY.- 32 MC INTER-CONNECT | |
| W5 D | 05100-6203 | CABLE ASSY.- 33 MC INTER-CONNECT | |
| W5 E | 05100-6204 | CABLE ASSY.- 34 MC INTER-CONNECT | |
| W5 F | 05100-6205 | CABLE ASSY.- 35 MC INTER-CONNECT | |
| W5 G | 05100-6206 | CABLE ASSY.- 36 MC INTER-CONNECT | |
| W5 H | 05100-6207 | CABLE ASSY.- 37 MC INTER-CONNECT | |
| W5 I | 05100-6208 | CABLE ASSY.- 38 MC INTER-CONNECT | |
| W5 J | 05100-6209 | CABLE ASSY.- 39 MC INTER-CONNECT | |
| W6 | 05100-6177 | CABLE- BUSS FREQUENCY | |
| W6 A | 05100-6104 | CABLE- TRANSFER #1 | |
| W6 B | 05100-6105 | CABLE- TRANSFER #2 | |
| W6 C | 05100-6106 | CABLE- TRANSFER #3 | |
| W6 D | 05100-6107 | CABLE- TRANSFER #4 | |
| W6 E | 05100-6108 | CABLE- TRANSFER #5 | |
| W6 F | 05100-6109 | CABLE- TRANSFER #6 | |
| W6 G | 05100-6110 | CABLE- TRANSFER #7 | |
| W6 H | 05100-6111 | CABLE- TRANSFER #8 | |
| W6 I | 05100-6175 | CABLE- OSC PROGRAMMING | |
| W7 | 05100-6181 | CABLE- MULTIPLIER INPUT | |
| W7 A | 05100-6119 | CABLE- 33MC MULTIPLIER INPUT | |
| W7 B | 05100-6120 | CABLE- 35MC MULTIPLIER INPUT | |
| W7 C | 05100-6121 | CABLE- 36MC MULTIPLIER INPUT | |
| W7 D | 05100-6122 | CABLE- 37MC MULTIPLIER INPUT | |
| W7 E | 05100-6123 | CABLE- 38MC MULTIPLIER INPUT | |

See list of abbreviations in introduction to this section

Table 6-1. Chassis Parts Cont'd.

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| W7 F | 05100-6124 | CABLE- 39MC MULTIPLIER INPUT | |
| W8 | 05100-6178 | CABLE ASSY. MULTIPLIER OUTPUT | |
| W8 A | 05100-6126 | CABLE- 350 MC OUTPUT | |
| W8 B | 05100-6127 | CABLE- 360 MC OUTPUT | |
| W8 C | 05100-6128 | CABLE- 370 MC OUTPUT | |
| W8 D | 05100-6129 | CABLE- 380 MC OUTPUT | |
| W8 E | 05100-6130 | CABLE- 39 MC OUTPUT | |
| W8 F | 05100-6159 | CABLE- 390 MC OUTPUT | |
| W9 | 05100-6125 | CABLE- 330 MC OUTPUT | |
| W10 | 05100-6133 | CABLE-MIXER #1 OUTPUT | |
| W11 | 05100-6131 | CABLE- MIXER # 2 OUTPUT | |
| W12 | 05100-6100 | CABLE- MIXER #3 INPUT | |
| W13 | 05100-6132 | CABLE-MIXER #3 OUTPUT | |
| W14 | 05100-6067 | ASSY.- HI-LEVEL OUT CABLE INCLUDES J5 | |
| W15 | 05100-6068 | ASSY.- LO-LEVEL OUT CABLE INCLUDES J6 | |
| W16 | 05100-6134 | ASSY.- SEARCH OSC. OUT CABLE | |
| W17 | 05100-6065 | CABLE ASSY.- OUTPUT INCLUDES J4 | |
| W18 | 05100-6066 | ASSY.- OUTPUT JUMPER CABLE | |
| W19 | 05100-6055 | CABLE ASSY, REMOTE, INCLUDES J7,J8,J9 | |
| XF1 | 1400-0084 | FUSEHOLDER EXTRACTOR POST TYPE | |
| XF2 | 1400-0084 | FUSEHOLDER EXTRACTOR POST TYPE | |
| MISCELLANEOUS | | | |
| | 05100-6176 | ASSY.- WELDING, HI FREQ. DECK | |
| | 05100-2048 | BAR- MTG. | |
| | 05100-2061 | BUSHING- LATCH | |
| | 05100-4010 | CLAMP- FILTER, HI FREQ. DECK | |
| | 05100-6180 | CABLE ASSY.- DECADE TEST | |
| | 1251-0194 | CONNECTOR:PRINTED CIRCUIT 15-CONTACT XA25A1 | |
| | 1251-0382 | CONNECTOR:12-TERMINAL XA25A2 | |
| | 05100-6061 | COVER ASSY.- BOTTOM | |
| | 05100-6062 | COVER ASSY.- TOP | |
| | 0510-0097 | FASTENER:PUSH-ON TYPE | |
| | 0900-0034 | GASKET:SILICONE RUBBER 1-7/16IDX1-5/8OD | |
| | 05100-2063 | LATCH- DECK | |
| | 05100-6060 | POWER SUPPLY CABLE ASSY. | |
| | 05100-2025 | PIN- PIVOT | |
| | 0510-0212 | FASTENER:HI-FREQ DECK | |
| | 1460-0164 | SPRING:HELICAL 0.25X0.30 0.022D WIRE | |
| | 1490-0030 | STAND:TILT | |
| | 05100-6063 | STRAP- GROUND | |
| | 05100-2049 | SUPPORT- SWITCH | |
| | 3100-0701 | SWITCH:ROTARY,LOCK-OPERATE | |
| | 0370-0112 | KNOB | |

See list of abbreviations in introduction to this section

Table 6-2. Pushbutton Switch Assembly A1 (05100-6003)
(Prefix all parts in this table A1)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------------------|--|------|
| C1 | 0150-0121 0510-0210 | C:FXD CER 0.1UF 50 VDCW NUT:CAPTIVE 8-32X15/32X0.263D | |
| CR1 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR2 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR3 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR4 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR5 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR6 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR7 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR8 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR9 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR10 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L3 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L5 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L6 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L8 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L9 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L10 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L11 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L12 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L13 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L14 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| R1 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| R2 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| R3 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| R4 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| R5 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| R6 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R7 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R8 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R9 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R10 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R11 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R12 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R13 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R14 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| R15 | 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | |
| S1 | 3104-0005 | SWITCH:PUSHBUTTON | |
| S2 | 3104-0006 | SWITCH:PUSHBUTTON | |
| S3 | 3104-0007 | SWITCH:PUSHBUTTON | |
| S4 | 3104-0007 | SWITCH:PUSHBUTTON | |
| S5 | 3104-0007 | SWITCH:PUSHBUTTON | |
| S6 | 3104-0007 | SWITCH:PUSHBUTTON | |
| S7 | 3104-0007 | SWITCH:PUSHBUTTON | |
| S8 | 3104-0007 | SWITCH:PUSHBUTTON | |

See list of abbreviations in introduction to this section

Table 6-2. Pushbutton Switch Assembly A1 (05100-6003) Cont'd.
(Prefix all parts in this table A1)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| S9 S10 | 3104-0007 3104-0007 05100-0023 05100-2037 05100-2035 05100-0025 05100-2065 05100-6051 05100-6052 05100-6055 05100-0067 05100-2036 05100-2038 | SWITCH-PUSHBUTTON SWITCH-PUSHBUTTON MISCELLANEOUS BAR-LOCKING BAR-RETAINING BAR-SWITCH BRACKET-CABLE BRACKET-SWITCH CABLE ASSY.-3-4MC CABLE ASSY.-&HI-FREQ. CABLE ASSY.-REMOTE GUARD-SWITCH ROD-SWITCH LOCKING SPACER-SWITCH | |

See list of abbreviations in introduction to this section

Table 6-3. Search Oscillator Module A2 (05100-6005)
(Prefix all parts in this table A2)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|--|------|
| A1 | 05100-6028 05100-2006 | OSCILLATOR-BOARD ASSY. BLANK BOARD-OSCILLATOR | |
| A1C1 | 0140-0202 | C:FXD MICA 15 PF 5% 500VDCW | |
| A1C2 | 0140-0202 | C:FXD MICA 15 PF 5% 500VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0140-0151 | C:FXD MICA 820PF 2% 300VDCW | |
| A1C6 | 0150-0111 0380-0059 | C:FXD CER 220PF 5% 300VDCW SPACER:SLEEVE BRS CP 0.250DX0.152IDX0.25 | |
| A1C7 | 0140-0145 | C:FXD MICA 22 PF 5% 500 VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1CR1 | 1902-0126 | SEMICON DEVICE:DIODE 2.61V 5% BREAKDOWN | |
| A1CR2 | 1902-0126 | SEMICON DEVICE:DIODE 2.61V 5% BREAKDOWN | |
| A1CR3 | 1902-0126 | SEMICON DEVICE:DIODE 2.61V 5% BREAKDOWN | |
| A1CR4 | 1902-0126 | SEMICON DEVICE:DIODE 2.61V 5% BREAKDOWN | |
| A1CR5 | 0122-0006 | C:VAR VOLTAGE 100 PF AT -4V | |
| A1CR6 | 0122-0006 | C:VAR VOLTAGE 100 PF AT -4V | |
| A1L1 | 05100-6171 | ASSY.-OSC. COIL 26UH | |
| A1Q1 | 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | |
| A1Q2 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A1R1 | 0727-0137 | R:FXD DEPC 5.18K OHM 1% 1/2W | |
| A1R2 | 0727-0115 | R:FXD DEPC 2000 OHM 1% 1/2W | |
| A1R3 | 0727-0109 | R:FXD DEPC 1470 OHM 1% 1/2W | |
| A1R4 | 0757-0197 | R:FXD MET FLM 1500 OHM 1% 1/2W | |
| A1R5 | 0757-0079 | R:FXD MET FLM 2700 OHM 2% 1/2W | |
| A1R6 | 0683-2735 | R:FXD COMP 27K OHM 5% 1/4W | |
| A1R7 | 0757-0079 | R:FXD MET FLM 2700 OHM 2% 1/2W | |
| A1R8 | 0758-0009 | R:FXD MET FLM 6800 OHM 5% 1/2W | |
| A1R9 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R10 | 0758-0006 | R:FXD MET FLM 10K OHM 5% 1/2W | |
| A1R11 | 0758-0010 | R:FXD MET OX FLM 3300 OHM 5% 1/2W | |
| A1R12 | 0683-1235 | R:FXD COMP 12K OHM 5% 1/4W | |
| A1R13 | 0683-1235 | R:FXD COMP 12K OHM 5% 1/4W | |
| A1R14 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A1R15 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R16 | 2100-0737 | R:VAR WW 200 OHM TYPE H CONFIGURATION | |
| A2 | 05100-6029 05100-2007 | OUTPUT BOARD ASSY. BLANK BOARD-OUTPUT | |
| A2C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C2 | 0160-0193 | C:FXD MICA 1125PF 5% | |
| A2C2 | 0380-0059 | SPACER:SLEEVE BRS CP 0.250DX0.152IDX0.25 | |
| A2C3 | 0140-0151 | C:FXD MICA 820PF 2% 300VDCW | |
| A2C4 | 0140-0152 | C:FXD MICA 1000 PF 5% 300 VDCW | |
| A2C5 | 0160-0192 | C:FXD MICA 525 PF 5% | |

See list of abbreviations in introduction to this section

Table 6-3. Search Oscillator Module A2 (05100-6005) Cont'd.
(Prefix all parts in this table A2)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|---|------|
| A2CR1 | 1901-0025 | SEMICON DEVICE: DIODE JUNCTION | |
| A2L1 | 9140-0141 | COIL: FWD RF 0.68 UH | |
| A2L2 | 9140-0180 | COIL: FWD 2.7UH 10% | |
| A2L3 | 9140-0179 | COIL-FWD R.F. 22 UH 10% 275 MA | |
| A2L4 | 9140-0096 | COIL: FWD RF 1 UH | |
| A2R1 | 0758-0012 | R: FWD MET FLM 12K OHM 5% 1/2W | |
| A2R2 | 0758-0043 | R: FWD MET FLM 1800 OHM 5% 1/2W | |
| A2R3 | 0757-0914 | R: FWD MET FLM 390 OHM 2% 1/8W | |
| A2R4 | 2100-0277 | R: VAR COMP 100 OHM 20% LIN 0.3W | |
| A2R5 | 0758-0024 | R: FWD MET FLM 100 OHM 5% 1/2W | |
| C1 | 0160-0345 | C: FWD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0150-0121 | C: FWD CER 0.1UF 50 VDCW | |
| C3 | 0150-0121 | C: FWD CER 0.1UF 50 VDCW | |
| C4 | 0160-0345 | C: FWD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| J1 | 1250-0083 | CONNECTOR: BNC | |
| L1 | 9140-0179 | COIL-FWD R.F. 22 UH 10% 275 MA | |
| L2 | 9140-0179 | COIL-FWD R.F. 22 UH 10% 275 MA | |
| R1 | 2100-0024 | R: VAR COMP 1000 OHM 10% LIN 2W | |
| | | MISCELLANEOUS | |
| | 05100-0026 | BRACKET-SEARCH OSC. | |
| | 05100-0027 | COVER-SEARCH OSC. | |
| | 05100-0070 | PLATE-SEARCH OSC. | |
| | 05100-2040 | PLATE-SIDE | |
| | 0340-0039 | INSULATOR:BUSHING | |
| | 0370-0030 | KNOB: | |
| | 5020-0241 | SUPPORT:ETCHED CIRCUIT BOARD | |
| | 0340-0037 | TERMINAL:STUD | |
| | 0340-0038 | TERMINAL:STUD | |

See list of abbreviations in introduction to this section

Table 6-4. 3 to 4 Mc Switch Module A3 (05100-6006)
(Prefix all parts in this table A3)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|----------------------------------|------|
| A1 | 05100-6030 | ASSY.- 3-4 MC SWITCH BD. | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C6 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C12 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C13 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C14 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C15 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C16 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C18 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1CR1 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR2 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR3 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR4 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR5 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR6 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR7 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR8 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR9 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR10 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR11 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR12 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR13 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR14 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR15 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR16 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR17 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR18 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR19 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR20 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR21 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR22 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR23 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR24 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR25 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR26 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1Q1 | 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | |
| A1R1 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R2 | 0683-3625 | R:FXD COMP 3600 OHM 5% 1/4W | |

See list of abbreviations in introduction to this section

Table 6-4. 3 to 4 Mc Switch Module A3 (05100-6006) Cont'd.
(Prefix all parts in this table A3)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|-----------|-----------------------------|------|
| A1R3 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R4 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R5 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R6 | 0683-3625 | RIFXD COMP 3600 OHM 5% 1/4W | |
| A1R7 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R8 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R9 | 0683-3315 | RIFXD COMP 330 OHM 5% 1/4W | |
| A1R10 | 0683-2225 | RIFXD COMP 2.2K OHM 5% 1/4W | |
| A1R11 | 0683-2225 | RIFXD COMP 2.2K OHM 5% 1/4W | |
| A1R12 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R13 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R14 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R15 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R16 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R17 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R18 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R19 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R20 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R21 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R22 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R23 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R24 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R25 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R26 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A1R27 | 0683-1035 | RIFXD COMP 10K OHM 5% 1/4 W | |
| A1R28 | 0683-1525 | RIFXD COMP 150 OHM 5% 1/4W | |
| A1R29 | 0683-1825 | RIFXD COMP 1800 OHM 5% 1/4W | |
| A2 | | SAME AS A1, PREFIX A2 | |
| A3 | | SAME AS A1, PREFIX A3 | |
| A4 | | SAME AS A1, PREFIX A4 | |
| A5 | | SAME AS A1, PREFIX A5 | |
| A6 | | SAME AS A1, PREFIX A6 | |
| A7 | | SAME AS A1, PREFIX A7 | |
| A8 | | SAME AS A1, PREFIX A8 | |
| A9 | | SAME AS A1, PREFIX A9 | |
| A10 | | SAME AS A1, PREFIX A10 | |
| A11 | | SAME AS A1, PREFIX A11 | |
| J1 | THRU | | |
| J8 | | CONNECTOR: JACK CHASSIS BNC | |
| J9 | | CONNECTOR: BNC JACK | |
| J10 | | CONNECTOR: JACK CHASSIS BNC | |
| J11 | | CONNECTOR: JACK CHASSIS BNC | |

See list of abbreviations in introduction to this section

Table 6-4. 3 to 4 Mc Switch Module A3 (05100-6006) Cont'd.
(Prefix all parts in this table A3)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|-------------------------------------|------|
| J12 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J13 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J14 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J15 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J16 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J17 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J18 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J19 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J20 | 1251-0087 | PART OF #1 3-4 MC CABLE(05100-6053) | |
| J21 | 1251-0087 | PART OF #2 3-4 MC CABLE(05100-6054) | |
| R1 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R2 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R3 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R4 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R5 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R6 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R7 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R8 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R9 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R10 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R11 | 0758-0093 | R:IFXD MET OX 56 OHM 5% 1/2W | |
| R12 | 0758-0036 | R:IFXD MET FLM 3600 OHM 5% 1/2W | |
| R13 | 0758-0036 | R:IFXD MET FLM 3600 OHM 5% 1/2W | |
| R14 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| R15 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| R16 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| R17 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| R18 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| R19 | 0758-0017 | R:IFXD MET FLM 1500 OHM 5% 1/2W | |
| | | MISCELLANEOUS | |
| | 05100-6053 | ASSY.-CABLE 3-4 #1 INCLUDES J20 | |
| | 05100-6054 | ASSY.-CABLE 3-4 #2 INCLUDES J21 | |
| | 05100-2008 | BLANK BOARD | |
| | 05100-2044 | COVER:BOTTOM | |
| | 05100-2043 | COVER:TOP | |
| | 05100-0058 | GASKET TOP | |
| | 05100-0059 | GASKET BOTTOM | |
| | 05100-2030 | HOUSING:3-4 MC SWITCH | |

See list of abbreviations in introduction to this section

Table 6-5. Connector Block Module A4 (05100-6004)
(Prefix all parts in this table A4)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|-------------------------------------|------|
| A1 | 05100-6026 | BOARD ASSEMBLY-METER AMPLIFIER | |
| | 05100-2004 | BLANK BOARD: METER AMP. | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C6 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1CR1 | 1901-0025 | SEMICON DEVICE: DIODE JUNCTION | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1Q1 | 1850-0091 | TRANSISTOR: GERMANIUM 2N2048 PNP | |
| A1Q2 | 1850-0062 | TRANSISTOR: GERMANIUM SPL 2N404 | |
| A1R1 | 0757-0368 | R:FXD MET FLM 34.0 OHM 1% 1/8W | |
| A1R2 | 0757-0368 | R:FXD MET FLM 34.0 OHM 1% 1/8W | |
| A1R3 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A1R4 | 0683-1225 | R:FXD COMP 1200 OHM 5% 1/4W | |
| A1R5 | 0683-1005 | R:FXD COMP 10 OHM 5% 1/4W | |
| A1R6 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R7 | 0757-0270 | R:FXD MET FLM 249K OHM 1% 1/8W | |
| A1R8 | 0758-0031 | R:FXD MET FLM 680 OHM 5% 1/2W | |
| A1R9 | 0757-0271 | R:FXD MET FLM 124K OHM 1% 1/8W | |
| A1R10 | 0683-5625 | R:FXD COMP 560 OHM 5% 1/4W | |
| A1R11 | 0758-0006 | R:FXD MET FLM 10K OHM 5% 1/2W | |
| A1R12 | 0721-0004 | R:FXD DEPC 100K OHM 1% 1/8W | |
| A2 | 05100-6027 | BOARD ASSEMBLY-24MC AMPLIFIER | |
| | 05100-2005 | BLANK BOARD: 24 MC AMP. | |
| | 9170-0105 | CORE: ADJUSTABLE TUNING | |
| A2C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C5 | 0160-0357 | C:FXD CER 85PF 5% 500VDCW | |
| A2C6 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L3 | 05100-6174 | COIL ASSY--VARIABLE .27-.35UH | |
| A2L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L5 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2Q1 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q2 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A2R1 | 0757-0277 | R:FXD MET FLM 49.9 OHM 1% 1/8W | |

See list of abbreviations in introduction to this section

Table 6-5. Connector Block Module A4 (05100-6004) Cont'd.
(Prefix all parts in this table A4)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A2R2 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R3 | 0757-0275 | R:FXD MET FLM 113 OHM 1% 1/8W | |
| A2R4 | 0683-6825 | R:FXD COMP 6800 OHM 5% 1/4W | |
| A2R5 | 0757-0269 | R:FXD MET FLM 270 OHM 1% 1/8W | |
| A2R6 | 0757-0273 | R:FXD MET FLM 3.01K OHM 1% 1/8W | |
| A2R7 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R8 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A3 | 05100-6025 05100-2003 | BOARD ASSEMBLY-EMITTER FOLLOWER BLANK BOARD | |
| A3C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A3C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A3C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A3L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A3Q1 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A3R1 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A3R2 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A3R3 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A4 | 05100-6025 | BOARD ASSEMBLY-EMITTER FOLLOWER SAME AS A3;PREFIX A4 | |
| L1 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L2 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L3 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L4 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L5 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L6 | 9140-0115 | COIL:FXD RF 22UH 10% | |
| L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| L8 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| | | MISCELLANEOUS | |
| | 05100-2029 05100-6004 05100-6103 | BLOCK:DECADE CONNECTOR BLOCK ASSY.-DECade CONNECTOR CABLE ASSY.-30 MC OUTPUT | |
| | 05100-6112 05100-6113 05100-6114 | CABLE ASSY.-+6.3V CONNECT CABLE ASSY.- INTERCONNECT CABLE ASSY.- 12.6V CONNECT | |
| | 05100-6115 05100-6116 05100-6184 1250-0149 1251-0424 | CABLE ASSY.-24MC CONNECT CABLE ASSY.-24 MC BUSS CABLE ASSY.-3MC CONNECTOR:RF COAXIAL BNC RT-ANGLE RECEPT CONNECTOR:MALE SINGLE BANANA | |
| | 05100-0001 05100-0007 0510-0213 0360-0357 0360-0358 | COVER:METER AMPLIFIER COVER:CONNECTOR BLOCK NUT:CAPTIVE SST 4-40 TERMINAL:FEED-THRU TERMINAL:PRESS-IN | |

See list of abbreviations in introduction to this section

Table 6-6. Mixer/Divider Modules A5-A11 (05100-6001)
(Prefix all parts in this table A5-A11)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A1 | 05100 6023 05100-2001 05100-2039 | BOARD ASSY.-DECADE MIXER BLANK-BOARD STRIP-GROUND | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C6 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C12 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C13 THRU | | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 2.2PF+/-0.1PF | |
| A1C16 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C17 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C18 | 0160-0344 | C:FXD MICA 220PF 1% | |
| A1C19 | 0160-0341 | C:FXD MICA 640PF 1% | |
| A1C20 | 0160-0327 | C:FXD CER 3.4PF+/-0.1PF | |
| A1C21 | 0140-0222 | C:FXD MICA 240PF 1% 300VDCW | |
| A1C22 | 0140-0233 | C:FXD MICA 480PF 1% 300VDCW | |
| A1C23 | 0140-0226 | C:FXD MICA 320PF 1% 300VDCW | |
| A1C24 | 0140-0226 | C:FXD MICA 320PF 1% 300VDCW | |
| A1C25 | 0160-0328 | C:FXD CER 4.6PF+/-0.1PF | |
| A1C26 | 0160-0337 | C:FXD MICA 160PF 1% | |
| A1C27 | 0160-0327 | C:FXD CER 3.4PF+/-0.1PF | |
| A1C28 | 0160-0344 | C:FXD MICA 220PF 1% | |
| A1C29 | 0160-0341 | C:FXD MICA 640PF 1% | |
| A1C30 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C31 | | NOT ASSIGNED | |
| A1C32 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C33 | 0160-0141 | C:FXD CER 1500 PF 10% 500VDCW | |
| A1C34 | 0160-0340 | C:FXD MICA 600PF 1% | |
| A1C35 | 0140-0225 | C:FXD MICA 300PF 1% 300VDCW | |
| A1C36 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C37 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C38 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C39 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C40 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C41 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C42 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C43 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C44 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C45 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C46 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C47 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C48 | 0160-0339 | C:FXD MICA 534PF 1% | |

= See list of abbreviations in introduction to this section

Table 6-6. Mixer/Divider Modules A5-A11 (05100-6001) Cont'd.
(Prefix all parts in this table A5-A11)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1C49 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A1CR1 | 1910-0029 | SEMICON DEVICE:DIODES GERM. MATCHED PAIR | |
| A1CR2 | 1910-0029 | SEMICON DEVICE:DIODES GERM. MATCHED PAIR | |
| A1CR3 | 1910-0029 | SEMICON DEVICE:DIODES GERM. MATCHED PAIR | |
| A1CR4 | 1910-0029 | SEMICON DEVICE:DIODES GERM. MATCHED PAIR | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L3 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | THRU | NOT ASSIGNED | |
| A1L10 | | COIL:FXD RF 10 UH | |
| A1L11 | 9140-0114 | COIL-VARIABLE .16-.23UH | |
| A1L12 | 05100-6166 | CORE:ADJUSTABLE TUNING | |
| A1L13 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L14 | 9140-0114 | COIL:FXD RF 10 UH | |
| A1L15 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L16 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L17 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L18 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L19 | 9140-0114 | COIL:FXD RF 10 UH | |
| A1L20 | 9140-0176 | COIL-FXD R.F. 4 UH 5% 250 MA | |
| A1L21 | 9140-0177 | COIL-FXD R.F. 8 UH 5% 500 MA | |
| A1L22 | 9140-0096 | COIL:FXD RF 1 UH | |
| A1L23 | THRU | NOT ASSIGNED | |
| A1L30 | | | |
| A1L31 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L32 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L33 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L34 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L35 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L36 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A1L37 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A1Q1 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A1Q2 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q3 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q4 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q5 | 1850-0075 | TRANSISTOR:GERMANIUM 2N779A PNP | |
| A1Q6 | 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | |
| A1R1 | 0683-4715 | R:FXD CUMP 470 OHM 5% 1/4W | |
| A1R2 | 0683-1025 | R:FXD CUMP 1000 OHM 5% 1/4W | |
| A1R3 | 0683-7515 | R:FXD CUMP 750 OHM 5% 1/4W | |
| A1R4 | 0757-0283 | R:FXD MET FLM 2000 OHM 1% 1/8W | |
| A1R5 | 0683-1025 | R:FXD CUMP 1000 OHM 5% 1/4W | |

See list of abbreviations in introduction to this section

Table 6-6. Mixer/Divider Modules A5-A11 (05100-6001) Cont'd.
(Prefix all parts in this table A5-A11)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A1R6 | 0757-0282 | R:FXD MET FLM 221 OHM 1% 1/8W | |
| A1R7 | 0683-2025 | R:FXD COMP 2000 OHM 5% 1/4W | |
| A1R8 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R9 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R10 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R11 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R12 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R13 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R14 | 0683-5625 | R:FXD COMP 5600 OHM 5% 1/4W | |
| A1R15 | 0683-1525 | R:FXD COMP 1500 OHM 5% 1/4W | |
| A1R16 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R17 | 0683-3015 | R:FXD COMP 300 OHM 5% 1/4W | |
| A1R18 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R19 | 0683-3925 | R:FXD COMP 3900 OHM 5% 1/4W | |
| A1R20 | 0683-3905 | R:FXD COMP 39 OHM 5% 1/4W | |
| A1R21 | 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | |
| A1R22 | 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | |
| A1R23 | 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | |
| A1T1 | 05100-6172 | TRANSFORMER-1.7UH | |
| A1T2 | 05100-6172 | TRANSFORMER-1.7UH | |
| A2 | 05100-6024 05100-2002 05100-2039 | BOARD ASSY.-DECade DIVIDER BLANK-BOARD STRIP-GROUND | |
| A2C51 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C52 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C53 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C54 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C55 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C56 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C57 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C58 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A2C59 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C60 | | NOT ASSIGNED | |
| A2C61 | 0160-0337 | C:FXD MICA 160PF 1% | |
| A2C62 | 0160-0342 | C:FXD MICA 800FF 1% | |
| A2C63 | 0160-0330 | C:FXD CER 6.6PF +/-0.1PF | |
| A2C64 | 0140-0220 | C:FXD MICA 200PF 1% 300VDC* | |
| A2C65 | 0140-0177 | C:FXD MICA 400 PF 1% 300 VDCW | |
| A2C66 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A2C67 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A2C68 | 0160-0329 | C:FXD CER 6.0PF +/-0.1PF | |
| A2C69 | 0160-0332 | C:FXD MICA 133PF 1% | |
| A2C70 | 0160-0328 | C:FXD CER 4.6PF +/-0.1PF | |
| A2C71 | 0160-0332 | C:FXD MICA 133PF 1% | |
| A2C72 | 0160-0330 | C:FXD CER 6.6PF +/-0.1PF | |
| A2C73 | 0140-0220 | C:FXD MICA 200FF 1% 300VDC* | |
| A2C74 | 0140-0177 | C:FXD MICA 400 PF 1% 300 VDCW | |
| A2C75 | | NOT ASSIGNED | |
| A2C76 | 0160-0333 | C:FXD MICA 15PF +/-0.5PF | |

= See list of abbreviations in introduction to this section

Table 6-6. Mixer/Divider Modules A5-A11 (05100-6001) Cont'd.
(Prefix all parts in this table A5-A11)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|----------------------------------|------|
| A2C77 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C78 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C79 | 0140-0230 | C:FXD MICA 420PF 1% 300VDCW | |
| A2C80 | 0160-0344 | C:FXD MICA 220 PF 1% | |
| A2C81 | 0160-0344 | C:FXD MICA 47PF 0.5% | |
| A2C82 | 0160-0335 | C:FXD MICA 91PF 1% | |
| A2C83 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C84 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A2C85 | 0160-0339 | C:FXD MICA 534PF 1% | |
| A2C86 | 0160-0339 | C:FXD MICA 534PF 1% | |
| A2C87 | THRU | NOT ASSIGNED | |
| A2C90 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C91 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C92 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C93 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C94 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C95 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C96 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C97 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2CR51 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A2CR52 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A2CR53 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A2CR54-CR56 | 1901-0040 | DIODE, SILICON 30 MA 1V 30 PIV | |
| A2L51 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L52 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L53 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L54 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L55 | THRU | NOT ASSIGNED | |
| A2L60 | | | |
| A2L61 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A2L62 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A2L63 | 9140-0114 | COIL:FXD RF 10 UH | |
| A2L64 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A2L65 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A2L66 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| A2L67 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| A2L68 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A2L69 | 05100-6170 | COIL-VARIABLE 3.5-5.5UH | |
| | 05100-6214 | COIL:FXD RF 4.7 UH | |
| A2L70 | 05100-6168 | COIL-VARIABLE 50-90UH | |
| A2L71 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A2L72 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A2L73 | THRU | NOT ASSIGNED | |
| A2L80 | | | |
| A2L81 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L82 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |

See list of abbreviations in introduction to this section

Table 6-6. Mixer/Divider Modules A5-A11 (05100-6001) Cont'd.
(Prefix all parts in this table A5-A11)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|---|------|
| A2L83 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L84 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2Q51 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q52 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q53 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q54 | 1850-0138 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q55 | 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | |
| A2R51 | 0757-0281 | R:FXD MET FLM 2.74 K OHM 1% 1/8W | |
| A2R52 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R53 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R54 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R55 | 0757-0280 | R:FXD MET FLM 1000 OHM 1% 1/8W | |
| A2R56 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R57 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R58 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R59 | 0683-2715 | R:FXD COMP 270 OHM 5% 1/4W | |
| A2R60 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R61 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R62 | 0683-2215 | R:FXD COMP 220 OHM 5% 1/4W | |
| A2R63 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R64 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R65 | 0683-1015 | R:FXD COMP 100 OHM 5% 1/4W | |
| A2R66 | 0683-1225 | R:FXD COMP 1200 OHM 5% 1/4W | |
| A2R67 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R68 | 0683-2025 | R:FXD COMP 2000 OHM 5% 1/4W | |
| A2R69 | 0757-0398 | R:FXD MET FLM 75 OHM 1% 1/8W | |
| A2R70 | 0683-1825 | R:FXD COMP 1800 OHM 5% 1/4W | |
| A2T51 | 05100-6169 | TRANSFORMER-FIXED | |
| A2T52 | 05100-6167 | TRANSFORMER-VARIABLE | |
| | 9170-0106 | CORE:ADJUSTABLE TUNING MISCELLANEOUS | |
| | 05100-6072 | ASSY.-CABLE 3 MC OUT | |
| | 05100-6073 | ASSY.-CABLE 12.6V | |
| | 05100-6074 | ASSY.-CABLE 6.3V | |
| | 05100-6076 | ASSY.-CABLE 3 MC | |
| | 05100-6077 | ASSY.-CABLE 24 MC | |
| | 05100-6070 | ASSY.-CABLE 30 MC CONNECT | |
| | 05100-6071 | ASSY.-CABLE BUSS FREQ. | |
| | 05100-6078 | ASSY.-CLAMP | |
| | 05100-2033 | BAR-FRONT DECADE | |
| | 05100-2034 | BAR-REAR DECADE | |
| | 05100-0010 | BRACKET-DECADE | |
| | 05100-0018 | BRACKET-END | |
| | 05100-0073 | COVER-DECADE | |
| | 05100-2032 | CONNECTOR-DECADE | |
| | 05100-6001 | DIVIDER ASSY.-3.0-3.1MC MIXER | |
| | 0510-0124 | NUT:CAPTIVE 6-32 ST CP | |

See list of abbreviations in introduction to this section

Table 6-7. Mixer/Filter Module A12 (05100-6002)
(Prefix all parts in this table A12)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A1 | 05100-6023 05100-2001 05100-2039 | BOARD ASSY.-DECADE MIXER BLANK-BOARD STRIP-GROUND | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C6 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C12 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C13 | THRU | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 2.2PF+/-0.1PF | |
| A1C16 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C17 | 0160-0326 | C:FXD MICA 220PF 1% | |
| A1C18 | 0160-0344 | C:FXD MICA 640PF 1% | |
| A1C19 | 0160-0341 | C:FXD CER 3.4PF+/-0.1PF | |
| A1C20 | 0160-0327 | C:FXD MICA 240PF 1% 300VDCW | |
| A1C21 | 0140-0222 | C:FXD MICA 480PF 1% 300VDCW | |
| A1C22 | 0140-0233 | C:FXD MICA 320PF 1% 300VDCW | |
| A1C23 | 0140-0226 | C:FXD MICA 320PF 1% 300VDCW | |
| A1C24 | 0140-0226 | C:FXD CER 4.6PF+/-0.1PF | |
| A1C25 | 0160-0328 | C:FXD MICA 160PF 1% | |
| A1C26 | 0160-0337 | C:FXD CER 3.4PF+/-0.1PF | |
| A1C27 | 0160-0327 | C:FXD MICA 220PF 1% | |
| A1C28 | 0160-0344 | C:FXD MICA 640PF 1% | |
| A1C29 | 0160-0341 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C30 | 0160-2055 | NOT ASSIGNED | |
| A1C31 | | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C32 | 0160-2055 | C:FXD CER 1500 PF 10% 500VDCW | |
| A1C33 | 0160-0141 | C:FXD MICA 600PF 1% | |
| A1C34 | 0160-0340 | C:FXD MICA 300PF 1% 300VDCW | |
| A1C35 | 0140-0225 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C36 | 0160-0326 | C:FXD CER 2.2PF+/-0.1PF | |
| A1C37 | 0160-0326 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C38 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C39 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C40 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C41 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C42 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C43 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C44 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C45 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C46 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C47 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C48 | 0160-0339 | C:FXD MICA 534PF 1% | |

See list of abbreviations in introduction to this section

Table 6-7. Mixer/Filter Module A12 (05100-6002) Cont'd.
(Prefix all parts in this table A12)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1C49 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A1CR1 | 1910-0029 | SEMICON DEVICE DIODES GERM. MATCHED PAIR | |
| A1CR2 | 1910-0029 | SEMICON DEVICE DIODES GERM. MATCHED PAIR | |
| A1CR3 | 1910-0029 | SEMICON DEVICE DIODES GERM. MATCHED PAIR | |
| A1CR4 | 1910-0029 | SEMICON DEVICE DIODES GERM. MATCHED PAIR | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L3 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | THRU | | |
| A1L10 | | NOT ASSIGNED | |
| A1L11 | 9140-0114 | COIL:FXD RF 10 UH | |
| A1L12 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| A1L13 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| A1L14 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L15 | 9140-0114 | COIL:FXD RF 10 UH | |
| A1L16 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L17 | 05100-6166 | COIL-VARIABLE .16-.23UH | |
| A1L18 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L19 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| | 9140-0114 | COIL:FXD RF 10 UH | |
| A1L20 | 9140-0176 | COIL-FXD R.F. 4 UH 5% 250 MA | |
| A1L21 | 9140-0177 | COIL-FXD R.F. 8 UH 5% 500 MA | |
| A1L22 | 9140-0096 | COIL:FXD RF 1 UH | |
| A1L23 | THRU | | |
| A1L30 | | NOT ASSIGNED | |
| A1L31 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L32 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L33 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L34 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L35 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L36 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A1L37 | 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | |
| A1Q1 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A1Q2 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q3 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q4 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q5 | 1850-0075 | TRANSISTOR:GERMANIUM 2N779A PNP | |
| A1Q6 | 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | |
| A1R1 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A1R2 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R3 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R4 | 0757-0283 | R:FXD MET FLM 2000 OHM 1% 1/8W | |
| A1R5 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |

See list of abbreviations in introduction to this section

Table 6-7. Mixer/Filter Module A12 (05100-6002) Cont'd.
(Prefix all parts in this table A12)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A1R6 | 0757-0282 | R:FXD MET FLM 221 OHM 1% 1/8W | |
| A1R7 | 0683-2025 | R:FXD COMP 2000 OHM 5% 1/4W | |
| A1R8 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R9 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R10 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R11 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R12 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R13 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A1R14 | 0683-5625 | R:FXD COMP 560 OHM 5% 1/4W | |
| A1R15 | 0683-1525 | R:FXD COMP 1500 OHM 5% 1/4W | |
| A1R16 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R17 | 0683-3015 | R:FXD COMP 300 OHM 5% 1/4W | |
| A1R18 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A1R19 | 0683-3925 | R:FXD COMP 3900 OHM 5% 1/4W | |
| A1R20 | 0683-3905 | R:FXD COMP 39 OHM 5% 1/4W | |
| A1R21 | 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | |
| A1R22 | 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | |
| A1T1 | 05100-6172 | TRANSFORMER-1.7UH | |
| A1T2 | 05100-6172 | TRANSFORMER-1.7UH | |
| A2 | 05100-6047 05100-2047 05100-2039 | BOARD ASSY.-FILTER BOARD-ETCHED CKT. STRIP-GROUND | |
| A2C51 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C52 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C53 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C54 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C55 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C56 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C57 | THRU | NOT ASSIGNED | |
| A2C60 | | C:FXD MICA 160PF 1% | |
| A2C61 | 0160-0337 | C:FXD MICA 800PF 1% | |
| A2C62 | 0160-0342 | C:FXD CER 6.6PF +/-0.1PF | |
| A2C63 | 0160-0330 | | |
| A2C64 | 0140-0220 | C:FXD MICA 200PF 1% 300VDCW | |
| A2C65 | 0140-0177 | C:FXD MICA 400 PF 1% 300 VDCW | |
| A2C66 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A2C67 | 0160-0338 | C:FXD MICA 267PF 1% | |
| A2C68 | 0160-0329 | C:FXD CER 6.0PF +/-0.1PF | |
| A2C69 | 0160-0332 | C:FXD MICA 133PF 1% | |
| A2C70 | 0160-0328 | C:FXD CER 4.6PF +/-0.1PF | |
| A2C71 | 0160-0332 | C:FXD MICA 133PF 1% | |
| A2C72 | 0160-0330 | C:FXD CER 6.6PF +/-0.1PF | |
| A2C73 | 0140-0220 | C:FXD MICA 200PF 1% 300VDCW | |
| A2C74 | 0140-0177 | C:FXD MICA 400 PF 1% 300 VDCW | |
| A2C75 | 0150-0055 | C:FXD T1 10 PF 5% 500 VDCW | |
| A2C76 | 0160-0336 | C:FXD MICA 100PF 1% | |
| A2C77 | 0160-0333 | C:FXD MICA 15PF +/-0.5PF | |
| A2C78 | | N.S.R. PART OF Z1 | |
| A2C79 | THRU | NOT ASSIGNED | |
| A2C90 | | | |

See list of abbreviations in introduction to this section

Table 6-7. Mixer/Filter Module A12 (05100-6002) Cont'd.
(Prefix all parts in this table A12)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------------------|---|------|
| A2C91 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C92 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C93 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C94 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C95 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2C96 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A2L51 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L52 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L53 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L54 | THRU | NOT ASSIGNED | |
| A2L60 | | COIL-VARIABLE .17-.22UH | |
| A2L61 | 05100-6166 | | |
| A2L62 | 9170-0105 05100-6166 9170-0105 | CORE:ADJUSTABLE TUNING COIL-VARIABLE .17-.22UH CORE:ADJUSTABLE TUNING | |
| A2L63 | 9140-0114 | COIL:FXD RF 10 UH | |
| A2L64 | 05100-6166 | COIL-VARIABLE .17-.22UH | |
| A2L65 | 9170-0105 05100-6166 9170-0105 | CORE:ADJUSTABLE TUNING COIL-VARIABLE .17-.22UH CORE:ADJUSTABLE TUNING | |
| A2L66 | 05100-6166 9170-0105 | COIL-VARIABLE .17-.22UH CORE:ADJUSTABLE TUNING | |
| A2L67 | 05100-6166 9170-0105 | COIL-VARIABLE .17-.22UH CORE:ADJUSTABLE TUNING N.S.R. PART OF Z1 | |
| A2L68 | THRU | NOT ASSIGNED | |
| A2L69 | | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L80 | | | |
| A2L81 | 9140-0179 | | |
| A2L82 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2L83 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A2Q51 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q52 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2Q53 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A2R51 | 0757-0281 | R:FXD MET FLM 2.74 K OHM 1% 1/8W | |
| A2R52 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R53 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R54 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R55 | 0757-0280 | R:FXD MET FLM 1000 OHM 1% 1/8W | |
| A2R56 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R57 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R58 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A2R59 | 0683-1515 | R:FXD COMP 150 OHM 5% 1/4W | |
| A2R60 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| A2R61 | 0757-0279 | R:FXD MET FLM 3.16K OHM 1% 1/8W | |
| A2R62 | 0757-0277 | R:FXD MET FLM 49.9 OHM 1% 1/8W | |
| A2R63 | 0757-0274 | R:FXD MET FLM 1.21K 1% 1/8W | |
| A2R64 | 2100-1429 | R:VAR W 2000 OHM 5% 1W | |
| A2T51 | 05100-6179 | TRANSFORMER-VARIABLE | |
| A2 | 9170-0106 05100-6182 | CORE:ADJUSTABLE TUNING COUPLER-30MC | |

See list of abbreviations in introduction to this section

Table 6-7. Mixer/Filter Module A12 (05100-6002) Cont'd.
(Prefix all parts in this table A12)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|-----------|---|------|
| | | <p style="text-align: center;">MISCELLANEOUS</p> <p>05100-6023 ASSY.-DECADE MIXER BD. 05100-6047 ASSY.-DECADE FILTER BD. 05100-6069 ASSY.-CABLE 30 MC OUT 05100-6070 ASSY.-CABLE 30 MC CONNECT 05100-6071 ASSY.-CABLE BUSS FREQ.</p> <p>05100-6073 ASSY.-CABLE 12.6V 05100-6074 ASSY.-CABLE 6.3V 05100-6076 ASSY.-CABLE 3 MC 05100-6077 ASSY.-CABLE 24 MC 05100-6078 ASSY.-CLAMP</p> <p>05100-2034 BAR-REAR DECADE 05100-2033 BAR-FRONT DECADE 05100-0010 BRACKET-DECade 05100-0018 BRACKET-END 05100-0019 COVER-DECade(#1)</p> <p>05100-2032 CONNECTOR-DECade 05100-6002 FILTER ASSY. 30-31 MC MIXER 0510-0124 NUT:CAPTIVE 6-32 ST CP</p> | |

See list of abbreviations in introduction to this section

Table 6-8. 39 to 390 Mc Multiplier Module A13 (05100-6016)
(Prefix all parts in this table A13)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|--|------|
| A1 | 05100-6035 05100-2019 | BOARD ASSY:39/390 MC MULTIPLIER BOARD- MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0357 | C:FXD CER 85PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD TI 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0150-0050 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0160-2055 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0130-0017 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | 0160-2055 | | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0160-0368 | C:FXD MICA 16PF 5% | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0128 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 | COIL:FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L3 | 9140-0179 | COIL:FXD R.F. 22 UH 10% 275 MA | |
| A1L4 | 9140-0179 | COIL:FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL:FXD RF: 0.27UH | |
| A1L6 | 9140-0095 | COIL:FXD RF: 0.27UH | |
| A1L7 | 9140-0179 | COIL:FXD R.F. 22 UH 10% 275 MA | |
| A1L8 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L9 | | N.S.R. PART OF A1 | |
| A1Q1 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| | 1205-0031 | HEAT SINK:TRANSISTOR | |
| A1Q2 | 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q3 | 1850-0020 | TRANSISTOR:GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q5 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |

Table 6-8. 39 to 390 Mc Multiplier Module A13 (05100-6016) Cont'd.
(Prefix all parts in this table A13)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R10 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R11 | 0683-1815 | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R12 | 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R13 | 0757-0076 | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R:VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R18 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1T1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-0084 | COVER- MULTIPLIER 39/390 MC | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |

See list of abbreviations in introduction to this section

Table 6-9. 38 to 380 Mc Multiplier Module A14 (05100-6017)
(Prefix all parts in this table A14)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|--|------|
| A1 | 05100-6036 05100-2020 | BOARD ASSY-- 38/380 MC BLANK BOARD= MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0357 | C:FXD CER 85PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD TI 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | 0150-0050 | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | | | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0160-0369 | C:FXD MICA 17PF 5% | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0128 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 05100-6186 | COIL-FXD R.F. 22 UH 10% 275 MA COIL ASSY.- VARIABLE .16-.23UH | |
| A1L2 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L3 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL:FXD RF: 0.27UH | |
| A1L6 | 9140-0095 | COIL:FXD RF: 0.27UH | |
| A1L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L8 | 05100-6186 9170-0105 | COIL ASSY.- VARIABLE .16-.23UH CORE:ADJUSTABLE TUNING | |
| A1L9 | | N.S.R. PART OF A1 | |
| A1Q1 | 1850-0118 1205-0031 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 HEAT SINK:TRANSISTOR | |
| A1Q2 | 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q3 | 1850-0020 | TRANSISTOR GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q5 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q6 | 1854-0005 | TRANSISTOR:2N708 NPN SILICON | |

See list of abbreviations in introduction to this section

Table 6-9. 38 to 380 Mc Multiplier Module A14 (05100-6017) Cont'd.
(Prefix all parts in this table A14)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 | THRU | NOT ASSIGNED | |
| A1R10 | | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R11 | 0683-1815 | | |
| A1R12 | 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R13 | 0757-0076 | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R1VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R18 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1R19 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4W | |
| A1R20 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R21 | 0683-3325 | R:FXD COMP 3300 OHM 5% 1/4W | |
| A1T1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-0083 | COVER- MULTIPLIER 38/380 MC | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |

See list of abbreviations in introduction to this section

Table 6-10. 37 to 370 Mc Multiplier Module A15 (05100-6018)
(Prefix all parts in this table A15)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|---|------|
| A1 | 05100-6161 05100-2020 | BOARD ASSY.- 37/370 MC BLANK BOARD:MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0358 | C:FXD CER 94PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD T1 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | 0150-0050 | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | 0160-2055 | C:VAR CER 8-50 PF N750 | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0160-0356 | C:FXD MICA 18PF 5% | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0128 | SEMICON DEVICE:DIODE SILICON STEP=RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L3 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | 9140-0095 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L7 | 9140-0179 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L8 | 05100-6186 | CORE:ADJUSTABLE TUNING | |
| A1L9 | | N.S.R.PART OF A1 | |
| A1Q1 | 1850-0118 1205-0031 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 HEAT SINK:TRANSISTOR | |
| A1Q2 | 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q3 | 1850-0020 | TRANSISTOR GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q5 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q6 | 1854-0005 | TRANSISTOR:2N708 NPN SILICON | |

See list of abbreviations in introduction to this section

Table 6-10. 37 to 370 Mc Multiplier Module A15 (05100-6018) Cont'd.
(Prefix all parts in this table A15)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 THRU | | NOT ASSIGNED | |
| A1R10 | | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R11 | 0683-1815 | | |
| A1R12 | 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R13 | 0757-0076 | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R:VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1R18 | 0683-2235 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R19 | 0683-1035 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R20 | 0683-2225 | R:FXD COMP 3300 OHM 5% 1/4W | |
| A1T1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-0082 | COVER- MULTIPLIER 37/370 MC | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |

See list of abbreviations in introduction to this section

Table 6-11. 36 to 360 Mc Multiplier Module A16 (05100-6019)
(Prefix all parts in this table A16)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|--|------|
| A1 | 05100-6037 05100-2020 | BOARD ASSY.- 36/360 MC MULTIPLIER BOARD- MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0358 | C:FXD CER 94PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD T1 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0150-0050 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0160-2055 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0130-0017 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0160-0370 | C:FXD MICA 20PF 5% | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0127 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L3 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL-FXD RF: 0.27UH | |
| A1L6 | 9140-0095 | COIL:FXD RF: 0.27UH | |
| A1L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L8 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L9 | | N.S.R. PART OF A1 | |
| A1Q1 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| | 1205-0031 | HEAT SINK:TRANSISTOR | |
| A1Q2 | 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q3 | 1850-0020 | TRANSISTOR GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q5 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q6 | 1854-0005 | TRANSISTOR:2N70B NPN SILICON | |

See list of abbreviations in introduction to this section

Table 6-11. 36 to 360 Mc Multiplier Module A16 (05100-6019) Cont'd.
(Prefix all parts in this table A16)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 | THRU | NOT ASSIGNED | |
| A1R10 | | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R11 | 0683-1815 | | |
| A1R12 | 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R13 | 0757-0076 | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R:VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R18 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1R19 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R20 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R21 | 0683-3325 | R:FXD COMP 3300 OHM 5% 1/4W | |
| A1T1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-0081 | COVER- MULTIPLIER 36/360 MC | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |

See list of abbreviations in introduction to this section

Table 6-12. 35 to 350 Mc Multiplier Module A17 (05100-6020)
(Prefix all parts in this table A17)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|---|------|
| A1 | 05100-6162 05100-2020 | BOARD ASSY.- 35/350 MC BLANK BOARD- MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0359 | C:FXD CER 103PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD T1 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0150-0050 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0160-2055 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0130-0017 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0140-0145 | C:FXD MICA 22 PF 5% 500 VDCW | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0127 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L3 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | 9140-0095 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L7 | 9140-0179 | CORE:ADJUSTABLE TUNING | |
| A1L8 | 05100-6186 | N.S.R. PART OF A1 | |
| A1L9 | 9170-0105 | TRANSISTOR-FNP GERMANIUM EIA 2N2360 | |
| A1Q1 | 1850-0118 | HEAT SINK:TRANSISTOR | |
| A1Q2 | 1205-0031 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q3 | 1850-0121 | TRANSISTOR GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0020 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q5 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1Q6 | 1854-0005 | TRANSISTOR:2N708 NPN SILICON | |

* See list of abbreviations in introduction to this section

Table 6-12. 35 to 350 Mc Multiplier Module A17 (05100-6020) Cont'd.
(Prefix all parts in this table A17)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 | THRU | NOT ASSIGNED | |
| A1R10 | | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R11 | 0683-1815 | | |
| A1R12 | 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R13 | 0757-0076 | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R:VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R18 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1R19 | 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | |
| A1R20 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R21 | 0683-3325 | R:FXD COMP 3300 OHM 5% 1/4W | |
| AIT1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |
| | 05100-0080 | COVER- MULTIPLIER 35/350 | |

See list of abbreviations in introduction to this section

Table 6-13. 33 to 330 Mc Multiplier Module A18 (05100-6021)
(Prefix all parts in this table A18)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|---|------|
| A1 | 05100-6038 05100-2021 | BOARD ASSY.- 33/330 MC BLANK BOARD- MULTIPLIER | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-0360 | C:FXD CER 120PF 5% 500VDCW | |
| A1C6 | 0150-0042 | C:FXD T1 4.7 PF 5% 500 VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C10 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C11 THRU | | NOT ASSIGNED | |
| A1C15 | | C:FXD CER 1000PF 600 VDCW | |
| A1C16 | 0150-0050 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C17 | 0160-2055 | C:VAR CER 8-50 PF N750 | |
| A1C18 | 0130-0017 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C19 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C20 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C21 | 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | |
| A1C22 | 0140-0145 | C:FXD MICA 22 PF 5% 500 VDCW | |
| A1C23 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C24 | 0130-0017 | C:VAR CER 8-50 PF N750 | |
| A1C25 | 0130-0018 | C:VAR CER 1.5-7 PF 500 | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR4 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR5 | 1901-0127 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | |
| A1CR6 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| A1L3 | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L4 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L5 | 9140-0095 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | 9140-0095 | COIL-FXD RF: 0.27UH | |
| A1L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L8 | 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | |
| | 9170-0105 | CORE:ADJUSTABLE TUNING | |
| A1L9 | | N.S.R. PART OF A1 | |
| A1Q1 | 1850-0118 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | |
| A1Q1 | 1205-0031 | HEAT SINK:TRANSISTOR | |
| A1Q3 | 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | |
| A1Q4 | 1850-0020 | TRANSISTOR:GERMANIUM 2N1143 PNP | |
| A1Q4 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A1R1 | 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | |
| A1R2 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |

See list of abbreviations in introduction to this section

Table 6-13. 33 to 330 Mc Multiplier Module A18 (05100-6021) Cont'd.
(Prefix all parts in this table A18)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R3 | 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | |
| A1R4 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R5 | 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | |
| A1R6 | 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | |
| A1R7 | 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | |
| A1R8 | 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | |
| A1R9 | THRU | NOT ASSIGNED | |
| A1R10 | | R:FXD COMP 180 OHM 5% 1/4W | |
| A1R11 | | R:FXD COMP 51 OHM 5% 1/4W | |
| A1R12 | | R:FXD MET FLM 560 OHM 2% 1/2W | |
| A1R13 | | | |
| A1R14 | 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | |
| A1R15 | 2100-0941 | R:VAR WW 1000 OHM 5% | |
| A1R16 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R17 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R18 | 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | |
| A1T1 | 05100-6163 | TRANSFORMER- INPUT DOUBLER | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| | | MISCELLANEOUS | |
| | 05100-0012 | COVER- MULTIPLIER 33/330 MC | |
| | 05100-6164 | CHASSIS ASSY.- MULTIPLIER | |

See list of abbreviations in introduction to this section

Table 6-14. 30 to 39 Mc Switch Module A19 (05100-6010)
(Prefix all parts in this table A19)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|---|------|
| A1 | 05100-6033 05100-2011 | BOARD ASSY.-SWITCH BLANK BOARD- SWITCH | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0150-0050 | C:FXD CER 1000PF 600 VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1CR1 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR2 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR3 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR4 | 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | |
| A1CR5 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1R1 | 0683-2425 | R:FXD COMP 2400 OHM 5% 1/4W | |
| A1R2 | 0683-1225 | R:FXD COMP 1200 OHM 5% 1/4W | |
| A1R3 | 0683-2425 | R:FXD COMP 2400 OHM 5% 1/4W | |
| A1R4 | 0683-2425 | R:FXD COMP 2400 OHM 5% 1/4W | |
| A2 | 05100-6033 | SAME AS A1 PREFIX A2 | |
| A3 | 05100-6033 | SAME AS A1 PREFIX A3 | |
| A4 | 05100-6033 | SAME AS A1 PREFIX A4 | |
| A5 | 05100-6033 | SAME AS A1 PREFIX A5 | |
| A6 | 05100-6033 | SAME AS A1 PREFIX A6 | |
| A7 | 05100-6033 | SAME AS A1 PREFIX A7 | |
| A8 | 05100-6033 | SAME AS A1 PREFIX A8 | |
| A9 | 05100-6033 | SAME AS A1 PREFIX A9 | |
| A10 | 05100-6033 | SAME AS A1 PREFIX A10 | |
| A11 | 05100-6034 | OUTPUT BOARD ASSEMBLY | |
| A11C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A11C2 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A11C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A11C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A11L1 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| A11L2 | 9140-0181 | COIL:FXD RF 22UH 5% | |
| A11Q1 | 1850-0075 | TRANSISTOR:GERMANIUM 2N779A PNP | |
| A11R1 | 0683-2425 | R:FXD COMP 2400 OHM 5% 1/4W | |
| A11R2 | 0683-3315 | R:FXD COMP 330 OHM 5% 1/4W | |
| A11R3 | 0683-8215 | R:FXD COMP 820 OHM 5% 1/4W | |
| A11R4 | 0757-0316 | R:FXD MET FLM 42.2 OHM 1% 1/8W | |
| J1 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J2 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J3 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J4 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J5 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J6 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J7 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J8 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J9 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J10 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J11 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J12 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J13 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J14 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J15 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J16 | | NOT ASSIGNED | |

See list of abbreviations in introduction to this section

Table 6-14. 30 to 39 Mc Switch Module A19 (05100-6010) Cont'd.
(Prefix all parts in this table A19)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|----------------------------------|------|
| J17 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J18 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J19 | 1251-0143 | CONNECTOR:FEMALE 14-CONTACT JACK | |
| L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| R1 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R2 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R3 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R4 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R5 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R6 | 0758-0094 | R:FXD MET CX 62 OHM 5% 1/2W | |
| R7 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| R8 | 0758-0094 | R:FXD MET CX 62 OHM 5% 1/2W | |
| R9 | 0758-0094 | R:FXD MET CX 62 OHM 5% 1/2W | |
| R10 | 0758-0094 | R:FXD MET CX 62 OHM 5% 1/2W | |
| | | MISCELLANEOUS | |
| | 05100-2023 | COVER-SWITCH, BOTTOM | |
| | 05100-2024 | COVER-SWITCH, TOP | |
| | 05100-0060 | GASKET-TOP COVER | |
| | 05100-2022 | HOUSING-30/39 MC SWITCH | |
| | 0360-0358 | TERMINAL:PRESS-IN | |

See list of abbreviations in introduction to this section

Table 6-15. 350 to 390 Mc Switch Module A20 (05100-6011)
(Prefix all parts in this table A20)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|-----------------------------------|------|
| C1 | 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| C2 | 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| C3 | 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| C4 | 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| C5 | 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| CR1 | 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR2 | 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR3 | 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR4 | 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | |
| CR5 | 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | |
| J1 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J2 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J3 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J4 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J5 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J6 | 1250-0212 | CONNECTOR:JACK CHASSIS BNC | |
| J7 | THRU | NOT ASSIGNED | |
| J17 | | CONNECTOR: FEMALE 14-CONTACT JACK | |
| J18 | 1251-0143 | | |
| L1 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| L2 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| L3 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| L4 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| L5 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| L6 | 9140-0159 | COIL:FXD 0.47UH 20% | |
| R1 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| R2 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| R3 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| R4 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| R5 | 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | |
| | | MISCELLANEOUS | |
| | 05100-2041 | COVER-350-390 MC SWITCH | |
| | 05100-2031 | HOUSING-350-390 MC SWITCH | |
| | 0340-0039 | INSULATOR:BUSHING | |
| | 0340-0036 | TERMINAL:STUD | |
| | 0360-0354 | TERMINAL:STUD | |
| | 0340-0038 | TERMINAL:STUD | |

See list of abbreviations in introduction to this section

Table 6-16. 1st UHF Mixer Module A21 (05100-6012)
(Prefix all parts in this table A21)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|---|------|
| A1 | 05100-6040 05100-2014 | BOARD ASSY.- FILTER BLANK-BOARD | |
| A1C1 | 0140-0225 | C:FXD MICA 300PF 1% 300VDCW | |
| A1C2 | 0121-0061 | C:VAR CER. DISK 5.5 -18 PF NPO 300 VDCW | |
| A1C3 | 0140-0190 | C:FXD MICA 39 PF 5% 300 VDCW | |
| A1C4 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C5 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C6 | 0140-0178 | C:FXD MICA 560 PF 2% 300 VDCW | |
| A1C7 | 0121-0061 | C:VAR CER. DISK 5.5 -18 PF NPO 300 VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1L1 | 9140-0094 | COIL:FXD RF: 0.68UH | |
| A1L2 | 9140-0188 | COIL:FXD 0.56UH 10% | |
| A1L3 | 9140-0120 | COIL:FXD 0.1 UH | |
| A1L4 | 9140-0120 | COIL:FXD 0.1 UH | |
| A1R1 | 0758-0073 | R:FXD MET FLM 24K OHM 5% 1/2W | |
| A1R2 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R3 | 2100-0741 | R:VAR WW 5K OHM 5% | |
| A1R4 | 0758-0035 | R:FXD MET FLM 3000 OHM 5% 1/2W | |
| A1R5 | 0757-0091 | R:FXD MET FLM 18K OHM 2% 1/2W | |
| A1R6 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R7 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R8 | 0758-0035 | R:FXD MET FLM 3000 OHM 5% 1/2W | |
| A2 | 05100-6039 05100-2013 05100-0020 | BOARD ASSY.- MIXER BOARD-BLANK SHIELD | |
| A2C1 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C2 | 0160-0375 | C:FXD CER 2.2PF+/-0.1PF 300VDCW | |
| A2C3 | 0160-0375 | C:FXD CER 2.2PF+/-0.1PF 300VDCW | |
| A2C4 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C5 | 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | |
| A2C6 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C7 | 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | |
| A2CR1 | 0122-0009 | C:VOLTAGE VARIABLE (PAIR) | |
| A2CR2 | 0122-0009 | C:VOLTAGE VARIABLE (PAIR) | |
| A2Q1 | 1850-0153 | TRANSISTOR:GERMANIUM PNP | |
| A2R1 | 0757-0296 | R:FXD MET FLM 200 OHM 2% 1/2W | |
| A2R2 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A2T1 | 05100-8003 | TRANSFORMER- PUMP INPUT | |
| A2T2 | 05100-8010 | TRANSFORMER- MIXER OUTPUT | |
| A2T3 | 05100-8011 | TRANSFORMER- FINAL OUTPUT | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C5 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |

See list of abbreviations in introduction to this section

Table 6-16. 1st UHF Mixer Module A21 (05100-6012) Cont'd.
(Prefix all parts in this table A21)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|----------------------|------|
| E1 | 9170-0042 | COIL:VAR 0.27-0.41UH | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | | NOT ASSIGNED | |
| J3 | 1250-0083 | CONNECTOR:BNC | |
| J4 | | NOT ASSIGNED | |
| J8 | | CONNECTOR:BNC | |
| J9 | 1250-0083 | | |
| L1 | 9140-0018 | COIL:FXD 1UH | |
| L2 | 9140-0080 | COIL:RF. 0.18 MH 10% | |
| L3 | 9140-0018 | COIL:FXD 1UH | |
| | | MISCELLANEOUS | |
| | 05100-0002 | BRACKET | |
| | 05100-0005 | COVER | |
| | 05100-0014 | FRAME | |
| | 05100-2056 | PLATE-END | |
| | 0340-0039 | INSULATOR:BUSHING | |
| | 0340-0038 | TERMINAL:STUD | |

= See list of abbreviations in introduction to this section

Table 6-17. 2nd UHF Mixer Module A22 (05100-6013)
(Prefix all parts in this table A22)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--|--|------|
| A1 | 05100-6042 05100-2016 | BOARD ASSY-- FILTER, 2ND MIXER BLANK BOARD | |
| A1C1 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C2 | 0140-0209 | C:FXD MICA 5PF 10% 500VDCW | |
| A1C3 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C4 | 0140-0145 | C:FXD MICA 22 PF 5% 500 VDCW | |
| A1C5 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C6 | 0140-0204 | C:FXD MICA 47PF 5% NPO 500VDCW | |
| A1C7 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C8 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C9 | 0160-2055 | C:FXD CER 0.01UF +80-20% 100VDCW | |
| A1C10 | 0150-0058 | C:FXD CER 2.2 PF +/- NPO 600 VDCW | |
| A1L1 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L2 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L3 | 05100-8005 | COIL-VARIABLE | |
| A1L4 | 9140-0080 | COIL:RF. 0.18 MH 10% | |
| A1L5 | 05100-8006 | COIL-VARIABLE | |
| A1L6 | 9140-0120 | COIL:FXD 0.1 UH | |
| A1L7 | 9140-0120 | COIL:FXD 0.1 UH | |
| A1Q1 | 1850-0119 | TRANSISTOR-PNP GERMANIUM EIA 2N963 | |
| A1R1 | 0683-6805 | R:FXD COMP 68 OHM 5% 1/4* | |
| A1R2 | 0758-0017 | R:FXD MET FLM 1500 OHM 5% 1/2W | |
| A1R3 | 0758-0017 | R:FXD MET FLM 1500 OHM 5% 1/2W | |
| A1R4 | 0757-0092 | R:FXD MET FLM 33K OHM 2% 1/2W | |
| A1R5 | 0757-0091 | R:FXD MET FLM 18K OHM 2% 1/2W | |
| A1R6 | 0686-3905 | R:FXD COMP 39 OHM 5% 1/2W | |
| A1R7 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R8 | 2100-0741 | R:VAR WW 5K OHM 5% | |
| A1R9 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R10 | 0686-3905 | R:FXD COMP 39 OHM 5% 1/2W | |
| A1R11 | 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2 W | |
| A1R12 | 0758-0035 | R:FXD MET FLM 3000 OHM 5% 1/2W | |
| A2 | 05100-6041 05100-2015 05100-0020 | BOARD ASSY-- UHF, 2ND MIXER BLANK BOARD SHIELD | |
| A2C1 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C2 | 0160-0374 | C:FXD CER 1.8PF +/-0.1PF 500VDCW | |
| A2C3 | 0160-0373 | C:FXD CER 1.6PF +/-0.1PF 600VDCW | |
| A2C4 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C5 | 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | |
| A2C6 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C7 | 0140-0069 | C:FXD MICA 550 FF 10% 500 VDCW | |
| A2C8 | 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | |
| A2C9 | 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | |
| A2C10 | 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | |
| A2CR1 | 0122-0009 | C:VOLTAGE VARIABLE (PAIR) | |
| A2CR2 | 0122-0009 | C:VOLTAGE VARIABLE (PAIR) | |
| A2Q1 | 1850-0152 | TRANSISTOR:GERMANIUM PNP | |

See list of abbreviations in introduction to this section

Table 6-17. 2nd UHF Mixer Module A22 (05100-6013) Cont'd.
(Prefix all parts in this table A22)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A2Q2 | 1850-0152 | TRANSISTOR:GERMANIUM PNP | |
| A2R1 | 0758-0009 | RIFXD MET FLM 6800 OHM 5% 1/2W | |
| A2R2 | 0758-0003 | RIFXD MET FLM 1000 OHM 5% 1/2W | |
| A2R3 | 0757-0296 | RIFXD MET FLM 200 OHM 2% 1/2W | |
| A2R4 | 0758-0003 | RIFXD MET FLM 1000 OHM 5% 1/2W | |
| A2T1 | 05100-8004 | TRANSFORMER- PUMP INPUT | |
| A2T2 | 05100-8007 | TRANSFORMER-MIXER OUT | |
| A2T3 | 05100-8008 | TRANSFORMER-AMP. OUTPUT | |
| A2T4 | 05100-8009 | TRANSFORMER-FINAL OUTPUT | |
| C1 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0150-0093 | CIFXD CER 0.01UF +80-20% 100VDCW | |
| C3 | 0140-0190 | CIFXD MICA 39 PF 5% 300 VDCW | |
| C4 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C5 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C6 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C7 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C8 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C9 | 0160-0345 | CIFXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| J3 | 1250-0083 | CONNECTOR:BNC | |
| L1 | 9140-0018 | COIL:FXD 1UH | |
| L2 | 9140-0018 | COIL:FXD 1UH | |
| L3 | 9140-0018 | COIL:FXD 1UH | |
| | | MISCELLANEOUS | |
| | 05100-0003 | BRACKET | |
| | 05100-0004 | COVER | |
| | 05100-0021 | FRAME | |
| | 05100-2056 | PLATE-END | |
| | 0340-0039 | INSULATOR:BUSHING | |
| | 0340-0038 | TERMINAL:STUD | |

See list of abbreviations in introduction to this section

Table 6-18. 3rd UHF Mixer Module A23 (05100-6014)
(Prefix all parts in this table A23)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|---|--|------|
| A1 | 05100-6043 05100-2017 1400-0117 | BOARD ASSY.- UHF BLANK BOARD CLIP: MOUNTING | |
| A1C1 | 0140-0214 | C:FXD MICA 60PF 5% 300VDCW | |
| A1C2 | 0150-0058 | C:FXD CER 2.2 PF +/- NPO 600 VDCW | |
| A1C3 | 0150-0059 | C:FXD CER 3.3 PF +/- NPO 600 VDCW | |
| A1C4 | 0150-0058 | C:FXD CER 2.2 PF +/- NPO 600 VDCW | |
| A1CR1 | 1900-0011 | SEMICON DEVICE: DIODE 1N416BM MATCH PAIR | |
| A1CR2 | 1900-0011 | SEMICON DEVICE: DIODE 1N416BM MATCH PAIR | |
| A1DL1 | 05100-6102 | CABLE ASSY.- DELAY LINE | |
| A1L1 | 05100-8018 | COIL- FILTER .115UH | |
| A1L2 | 9140-0120 | COIL:FXD 0.1 UH | |
| A1R1 | 0757-0294 | R:FXD MET FLM 17.8 OHM 1% 1/8W | |
| A1R2 | 0757-0297 | R:FXD MET OX 300 OHM 2% 1/2W | |
| A1R3 | 0757-0297 | R:FXD MET OX 300 OHM 2% 1/2W | |
| A1R4 | 0757-0295 | R:FXD MET FLM 11.5 OHM 1% 1/8W | |
| A1R5 | 0757-0074 | R:FXD MET OX 430 OHM 2% 1/2W | |
| A1R6 | 0757-0074 | R:FXD MET OX 430 OHM 2% 1/2W | |
| A2 | 05100-6165 05100-2057 | BOARD ASSY.- FILTER BLANK-BOARD | |
| A2C1 | 0160-0178 | C:FXD MICA 27PF 5% | |
| A2C2 | 0140-0034 | C:FXD MICA 22 PF 5% 500 VDCW | |
| A2C3 | 0150-0058 | C:FXD CER 2.2 PF +/- NPO 600 VDCW | |
| A2L1 | 9140-0018 | COIL:FXD 1UH | |
| A2L2 | 9140-0018 | COIL:FXD 1UH | |
| A2L3 | 9140-0024 | COIL:FXD 0.68 UH | |
| A2L4 | 9140-0024 | COIL:FXD 0.68 UH | |
| J1 | 1250-0083 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| J3 | 1250-0118 | CONNECTOR:BNC | |
| L1 | 9140-0088 | INDUCTOR:RF 0.33UH 5% | |
| L2 | 9140-0088 | INDUCTOR:RF 0.33UH 5% | |
| | | MISCELLANEOUS | |
| | 1400-0109 05100-0011 05100-0013 05100-2055 05100-2026 | CLIP: MOUNTING COVER FRAME PLATE- RIGHT END PLATE- RIGHT END | |
| | 3040-0037 05100-0068 | PIN: DRIVE RH SST 3/16 SHIELD- FILTER | |

See list of abbreviations in introduction to this section

Table 6-19. Output Amplifier Module A24 (05100-6015)
(Prefix all parts in this table A24)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|--------------------------|--|------|
| A1 | 05100-6044 05100-2018 | BOARD ASSY.- OUTPUT AMPLIFIER BLANK BOARD | |
| A1C1 | 0140-0204 | C:FXD MICA 47PF 5% NPO 500VDCW | |
| A1C2 | 0180-0137 | C:FXD ELECT TA 100 UF 20% 10VDCW | |
| A1C3 | 0180-0010 | C:FXD ELECT BUFBUF -15%+20% 30VDCW | |
| A1C4 | 0180-0155 | C:FXD TA 2.2UF 20% 20VDCW NOT RECOMMENDED FOR FIELD REPLACEMENT | |
| A1C5 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C6 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C7 | 0180-0033 | C:FXD ELECT 50UF 6VDCW | |
| A1C8 | 0180-0159 | C:FXD ELECT 220UF 10VDCW | |
| A1C9 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C10 | 0180-0058 | C:FXD ELECT 50UF -10%+100% 25VDCW | |
| A1C11 | 0180-0039 | C:FXD ELECT 100UF 12VDCW | |
| A1C12 | 0180-0058 | C:FXD ELECT 50UF -10%+100% 25VDCW | |
| A1C13 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C14 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C15 | THRU | NOT ASSIGNED | |
| A1C20 | | C:FXD ELECT 220UF 10VDCW | |
| A1C21 | 0180-0159 | C:FXD ELECT 20UF 25VDCW | |
| A1C22 | 0180-0045 | C:FXD CER 0.1UF 50 VDCW | |
| A1C23 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C24 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C25 | 0180-0039 | C:FXD ELECT 100UF 12VDCW | |
| A1C26 | 0180-0061 | C:FXD ELECT 100UF +100%-10% 15VDCW | |
| A1C27 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C28 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C29 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C30 | 0160-0127 | C:FXD CER 1UF 20% 25VDCW | |
| A1C31 | 0160-0127 | C:FXD CER 1UF 20% 25VDCW | |
| A1C32 | 0180-0098 | C:FXD ELECT 100UF 20% 20VDCW | |
| A1C33 | 0150-0121 | C:FXD CER 0.1UF 50 VDCW | |
| A1C34 | THRU | NOT ASSIGNED | |
| A1C40 | | NOT ASSIGNED | |
| A1C41 | 0150-0070 | C:FXD CER .02UF 20% 500VDCW | |
| A1C42 | 0140-0159 | C:FXD MICA 3000PF 300VDCW | |
| A1C43 | 0140-0159 | C:FXD MICA 3000PF 300VDCW | |
| A1C44 | 0150-0070 | C:FXD CER .02UF 20% 500VDCW | |
| A1C45 | 0160-0174 | C:FXD CER 0.47UF +80-20% 25VDCW | |
| A1CR1 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR2 | 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | |
| A1CR3 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR4 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR5 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR6 | 1901-0040 | SEMICON DEVICE:DIODE SILICON | |
| A1CR7 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1CR8 | 1901-0040 | SEMICON DEVICE:DIODE SILICON | |
| A1CR9 | 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | |
| A1L1 | 05100-6183 | COIL ASSY.- VARIABLE | |
| A1L2 | 9140-0137 | COIL:FXD RF 100 UH | |

= See list of abbreviations in introduction to this section

Table 6-19. Output Amplifier Module A24 (05100-6015) Cont'd.
(Prefix all parts in this table A24)

| Reference Designation | # Stock No. | Description # | Note |
|-----------------------|-------------|-----------------------------------|------|
| A1L3 | 9140-0137 | COIL:FXD RF 100 UH | |
| A1L4 | 9140-0096 | COIL:FXD RF 1 UH | |
| A1L5 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L6 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L7 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1L8 | 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | |
| A1Q1 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| A1Q2 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| A1Q3 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| A1Q4 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| | 1205-0012 | HEAT DISSIPATOR:SEMICONDUCTOR | |
| A1Q5 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| | 1205-0012 | HEAT DISSIPATOR:SEMICONDUCTOR | |
| A1Q6 | 1854-0019 | TRANSISTOR:SILICON NPN | |
| | 1205-0012 | HEAT DISSIPATOR:SEMICONDUCTOR | |
| A1Q7 | 1851-0017 | TRANSISTOR:2N1304 | |
| A1Q8 | 1854-0003 | TRANSISTOR:INPN SILICON | |
| A1Q9 | 1854-0003 | TRANSISTOR:INPN SILICON | |
| A1Q10 | 1853-0001 | TRANSISTOR:PNP SILICON 30V 900MW | |
| A1Q11 | 1853-0001 | TRANSISTOR:PNP SILICON 30V 900MW | |
| A1R1 | 2100-0806 | R:VAR WW 5K OHM 5% | |
| A1R2 | 0757-0344 | R:FXD MET FLM 1.00MEGOHM 1% 1/4W | |
| A1R3 | 0758-0006 | R:FXD MET FLM 10K OHM 5% 1/2W | |
| A1R4 | 0758-0015 | R:FXD MET FLM 220 OHM 5% 1/2W | |
| A1R5 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R6 | 0727-0012 | R:FXD DEPC 20 OHM 1% 1/2W | |
| A1R7 | 2100-0108 | R:VAR COMP LIN 100 OHM 10% 1/3W | |
| A1R8 | 0758-0010 | R:FXD MET OX FLM 3300 OHM 5% 1/2W | |
| A1R9 | 0758-0015 | R:FXD MET FLM 220 OHM 5% 1/2W | |
| A1R10 | 0758-0010 | R:FXD MET OX FLM 3300 OHM 5% 1/2W | |
| A1R11 | 0758-0028 | R:FXD MET FLM 270 OHM 5% 1/2W | |
| A1R12 | 0727-0012 | R:FXD DEPC 20 OHM 1% 1/2W | |
| A1R13 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R14 | 0758-0015 | R:FXD MET FLM 220 OHM 5% 1/2W | |
| A1R15 | 0758-0009 | R:FXD MET FLM 6800 OHM 5% 1/2W | |
| A1R16 | 0758-0044 | R:FXD MET OX FLM 2200 OHM 5% 1/2W | |
| A1R17 | THRU | NOT ASSIGNED | |
| A1R20 | | | |
| A1R21 | 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | |
| A1R22 | 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | |
| A1R23 | 0758-0045 | R:FXD MET FLM 3900 OHM 5% 1/2W | |
| A1R24 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R25 | 0758-0028 | R:FXD MET FLM 270 OHM 5% 1/2W | |
| A1R26 | 0758-0094 | R:FXD MET OX 62 OHM 5% 1/2W | |
| A1R27 | 0758-0028 | R:FXD MET FLM 270 OHM 5% 1/2W | |
| A1R28 | 0758-0028 | R:FXD MET FLM 270 OHM 5% 1/2W | |
| A1R29 | 0758-0083 | R:FXD MET OX 68 OHM 5% 1/2W | |
| A1R30 | 0758-0083 | R:FXD MET OX 68 OHM 5% 1/2W | |
| A1R31 | 0727-0189 | R:FXD DEPC 41.7K OHM 1% 1/2W | |
| A1R32 | 0727-0189 | R:FXD DEPC 41.7K OHM 1% 1/2W | |

See list of abbreviations in introduction to this section

Table 6-19. Output Amplifier Module A24 (05100-6015) Cont'd.
(Prefix all parts in this table A24)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|------------|--|------|
| A1R33 THRU | | NOT ASSIGNED | |
| A1R40 | | R:FXD MET FLM 5600 OHM 5% 1/2W | |
| A1R41 | 0758-0057 | R:FXD MET FLM 5600 OHM 5% 1/2W | |
| A1R42 | 0758-0057 | R:FXD MET FLM 5600 OHM 5% 1/2W | |
| A1R43 | 0758-0057 | R:FXD MET FLM 5600 OHM 5% 1/2W | |
| A1R44 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R45 | 0758-0054 | R:FXD MET FLM 330 OHM 5% 1/2W | |
| A1R46 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R47 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R48 | 0758-0053 | R:FXD MET FLM 100K OHM 5% 1/2W | |
| A1R49 | 0758-0071 | R:FXD MET FLM 4300 OHM 5% 1/2W | |
| A1R50 | 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | |
| A1R51 | 0758-0018 | R:FXD MET FLM 15K OHM 5% 1/2W | |
| A1R52 | 0758-0071 | R:FXD MET FLM 4300 OHM 5% 1/2W | |
| A1R53 | 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | |
| A1R54 | 0758-0053 | R:FXD MET FLM 100K OHM 5% 1/2W | |
| A1R55 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A1R56 | 2100-0806 | R:VAR WW 5K OHM 5% | |
| A1R57 | 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | |
| A1R58 | 0758-0017 | R:FXD MET FLM 1500 OHM 5% 1/2W | |
| A1R59 | 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | |
| A1R60 | 0758-0057 | R:FXD MET FLM 5600 OHM 5% 1/2W | |
| A1R61 | 2100-0806 | R:VAR WW 5K OHM 5% | |
| C1 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C2 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C3 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C4 | 0160-0345 | C:FXD CER 1000FF +80-20% 500VDCW FEED-THRU | |
| C5 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C6 | 0160-0345 | C:FXD CER 1000FF +80-20% 500VDCW FEED-THRU | |
| C7 | 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | |
| C8 | 0160-0345 | C:FXD CER 1000FF +80-20% 500VDCW FEED-THRU | |
| J1 | 1250-0118 | CONNECTOR:BNC | |
| J2 | 1250-0083 | CONNECTOR:BNC | |
| J3 | 1250-0083 | CONNECTOR:BNC | |
| MISCELLANEOUS | | | |
| | 05100-0022 | COVER- AMPLIFIER | |
| | 05100-0015 | FRAME- AMPLIFIER | |
| | 0340-0039 | INSULATOR:BUSHING | |
| | 05100-2027 | PLATE- END, AMPLIFIER | |
| | 05100-2028 | PLATE- END | |
| | 0340-0038 | TERMINAL:STUD | |

= See list of abbreviations in introduction to this section

Table 6-20. Power Supply Module A25 (05100-6007)
(Prefix all parts in this table A25)

| Reference Designation | # Stock No. | Description # | Note |
|--|---|---|------|
| A1 | 05100-6031 05100-2009 1400-0010 | BOARD ASSY.- RECTIFIER BLANK BOARD CLIP:ELECTRICAL PH BRZ NP 13/32X3/8X1/2 | |
| A1C1 A1C2 | 0180-0205 0180-0205 | C:IFXD ALUM. 12 UF -10 +75% 150VDCW C:IFXD ALUM. 12 UF -10 +75% 150VDCW | |
| A1CR1 A1CR2 A1CR3 A1CR4 A1CR5 | 1901-0049 1901-0049 1901-0049 1901-0049 1901-0026 | SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON 200PIV | |
| A1CR6 A1CR7 A1CR8 A1CR9 A1CR10 | 1901-0026 1901-0026 1901-0026 1901-0049 1901-0049 | SEMICON DEVICE:DIODE SILICON 200PIV SEMICON DEVICE:DIODE SILICON 200PIV SEMICON DEVICE:DIODE SILICON 200PIV SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON | |
| A1CR11 A1CR12 A1CR13 A1CR14 A1CR15 | 1901-0049 1901-0049 1902-0060 1902-0061 1902-0058 | SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON | |
| A1CR16 A1CR17 A1CR18 A1CR19 A1CR20 | 1902-0059 1901-0025 1901-0025 1902-0080 1902-0079 | SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE JUNCTION SEMICON DEVICE:DIODE JUNCTION SEMICON DEVICE:DIODE SILICON SEMICON DEVICE:DIODE SILICON | |
| A1CR21 A1CR22 | 1901-0025 1901-0025 | SEMICON DEVICE:DIODE JUNCTION SEMICON DEVICE:DIODE JUNCTION | |
| A1F1 A1F2 | 2110-0033 2110-0033 | FUSE: 0.75AMP 250V FUSE: 0.75AMP 250V | |
| A1Q1 | 1850-0064 | TRANSISTOR:GERMANIUM 2N1183 PNP | |
| A1R1 A1R2 A1R3 A1R4 A1R5 | 0757-0290 0757-0290 0757-0289 0757-0289 0757-0290 | R:IFXD MET FLM 6.19K OHM 1% 1/8W R:IFXD MET FLM 6.19K OHM 1% 1/8W R:IFXD MET FLM 13.3K OHM 1% 1/8W R:IFXD MET FLM 13.3K OHM 1% 1/8W R:IFXD MET FLM 6.19K OHM 1% 1/8W | |
| A1R6 | 0757-0290 | R:IFXD MET FLM 6.19K OHM 1% 1/8W | |
| A2 | 05100-6032 05100-2010 | BOARD ASSY.- REGULATOR BLANK BOARD | |
| A2C1 A2C2 | 0180-0049 0180-0049 | C:IFXD ELECT 20UF 50VDCW C:IFXD ELECT 20UF 50VDCW | |
| A2CR1 A2CR2 | 1902-0769 1902-0769 | DIODE BREAKDOWN:5.3/5.7V 400MW DIODE BREAKDOWN:5.3/5.7V 400MW | |
| A2Q1 A2Q2 A2Q3 A2Q4 | 1851-0017 1850-0062 1854-0003 | TRANSISTOR:2N1304 TRANSISTOR:GERMANIUM SPL 2N404 NOT ASSIGNED TRANSISTOR:NPN SILICON | |

See list of abbreviations in introduction to this section

Table 6-20. Power Supply Module A25 (05100-6007) Cont'd.
(Prefix all parts in this table A25)

| Reference Designation | Stock No. | Description # | Note |
|-----------------------|---|--|------|
| A2Q5 | 1853-0001 | TRANSISTOR:PNP SILICON 30V 900MW | |
| A2Q6 | 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | |
| A2Q7 | 05100-6188 | TRANSISTOR ASSY.- 6.3V | |
| A2Q8 | 05100-6187 | TRANSISTOR ASSY.- 12.6V | |
| A2R1 | 0683-2735 | R:FXD COMP 27K OHM 5% 1/4W | |
| A2R2 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A2R3 | 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | |
| A2R4 | 0683-2735 | R:FXD COMP 27K OHM 5% 1/4W | |
| A2R5 | 0757-0288 | R:FXD MET FLM 9.09K OHM 1% 1/8W | |
| A2R6 | 0757-0288 | R:FXD MET FLM 9.09K OHM 1% 1/8W | |
| A2R7 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A2R8 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A2R9 | 0757-0086 | R:FXD MET FLM 51 OHM 2% 1/2W | |
| A2R10 | 0757-0086 | R:FXD MET FLM 51 OHM 2% 1/2W | |
| A2R11 | 0698-3122 | R:FXD MET FLM 412 OHM 1% 1/8W | |
| A2R12 | 2100-0325 | R:VAR WW 100 OHM 10% LIN 1/4W | |
| A2R13 | 0757-0287 | R:FXD MET FLM 499 OHM 1% 1/2W | |
| A2R14 | 2100-0325 | R:VAR WW 100 OHM 10% LIN 1/4W | |
| A2R15 | 0698-3122 | R:FXD MET FLM 412 OHM 1% 1/8W | |
| A2R16 | 0758-0066 | R:FXD MET FLM 620 OHM 5% 1/2W | |
| A2R17 | 0758-0066 | R:FXD MET FLM 620 OHM 5% 1/2W | |
| A2R18 | 0758-0004 | R:FXD MET FLM 2700 OHM 5% 1/2W | |
| A2R19 | 0758-0066 | R:FXD MET FLM 620 OHM 5% 1/2W | |
| A2R20 | 0758-0066 | R:FXD MET FLM 620 OHM 5% 1/2W | |
| A2R21 | 0758-0004 | R:FXD MET FLM 2700 OHM 5% 1/2W | |
| A2R22 | 0758-0033 | R:FXD MET FLM 2000 OHM 5% 1/2W | |
| A2R23 | 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | |
| A2R24 | 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | |
| A3 | 05100-6059 | CAP. & COIL ASSY. | |
| A3C1 | 0180-0104 | C:FXD ELECT 2000UF 15VDCW | |
| A4 | 05100-6059 | CAP. & COIL ASSY. INCLUDES C1 AND L1 | |
| C1 | 0180-0128 | C:FXD ELECT 3000UF -10+30% 30VDCW | |
| C2 | 0180-0204 | C:FXD ALUM 2800 UF 40 VDCW +100 -10% | |
| C3 | 0160-0127 | C:FXD CER 1UF 20% 25VDCW | |
| C4 | 0160-0127 | C:FXD CER 1UF 20% 25VDCW | |
| P1 | 1251-0216 | CONNECTOR:MALE 9-CONTACT TYPE D | |
| P2 | 1251-0216 | CONNECTOR:MALE 9-CONTACT TYPE D | |
| Q1 | 1854-0020 1200-0092 1200-0087 1200-0076 | TRANSISTOR:NPN SILICON BUSHING:TRANSISTOR CLAMP:TRANSISTOR INSULATOR:TRANISTOR | |
| Q2 | 1651-0017 | TRANSISTOR:2N1304 | |
| Q3 | 1205-0026 1205-0025 1850-0062 1205-0026 1205-0025 | HEAT DISSIPATOR:BODY NUT:HEAT DISSIPATOR TRANSISTOR:GERMANIUM SPL 2N404 HEAT DISSIPATOR:BODY NUT:HEAT DISSIPATOR | |

= See list of abbreviations in introduction to this section

Table 6-20. Power Supply Module A25 (05100-6007) Cont'd.
 (Prefix all parts in this table A25)

See list of abbreviations in introduction to this section

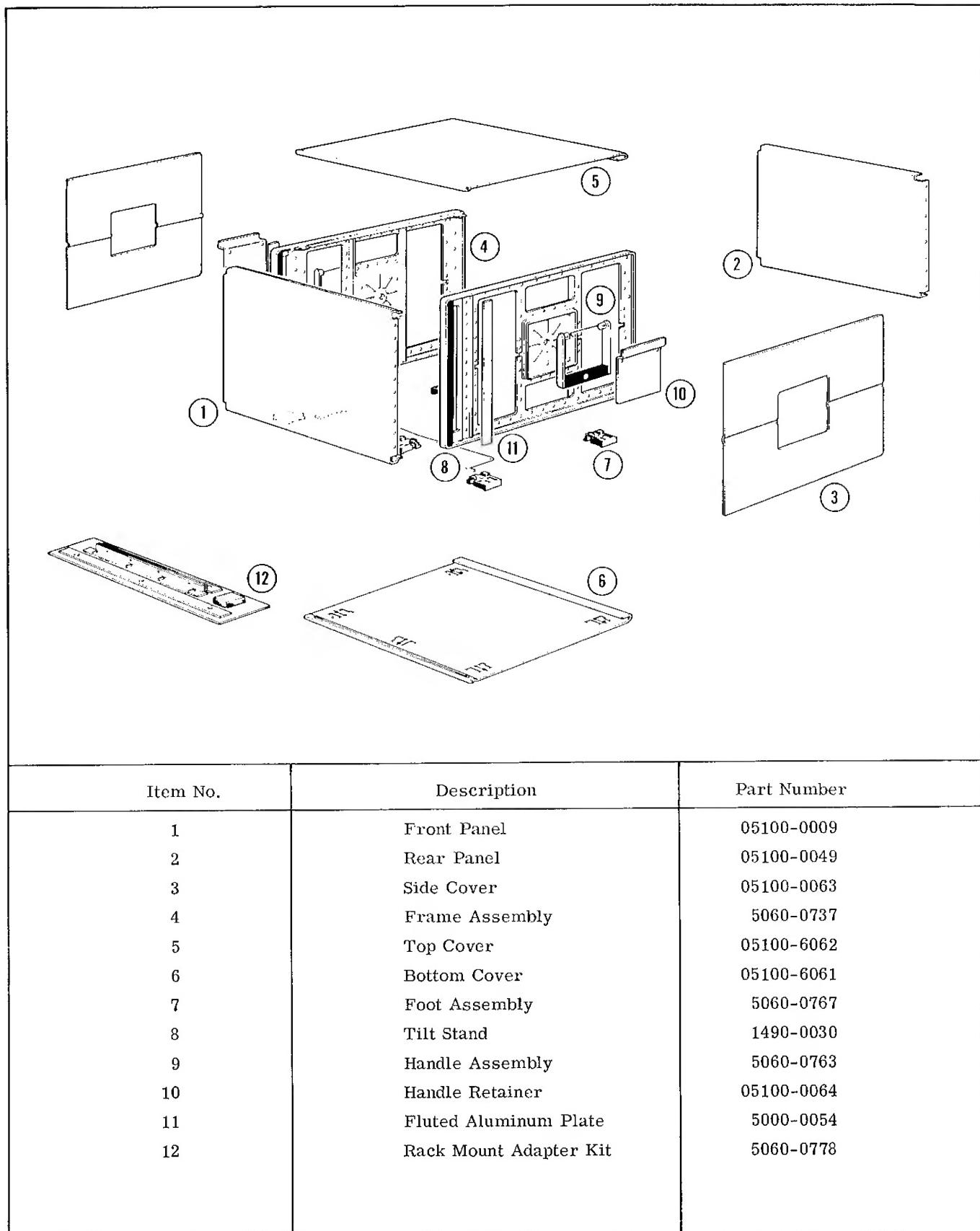


Figure 6-1. Modular Cabinet Parts

Table 6-21. Replaceable Parts

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-----------|--|-------|-------------------|----|
| 0121-0059 | C:VAR CER. DISK 2PF TO 8 PF 300 VDCW NPO | 72982 | NPO 538-006 | 7 |
| 0121-0061 | C:VAR CER. DISK 5.5 -18 PF NPO 300 VDCW | 72982 | NPO 538-011 | 2 |
| 0122-0006 | C:VAR VOLTAGE 100 PF AT -4V | 28480 | V100 | 2 |
| 0122-0009 | C:VOLTAGE VARIABLE (PAIR) | 28480 | 0122-0009 | 4 |
| 0130-0017 | C:VAR CER 8-50 PF N750 | 28480 | 0130 0017 | 24 |
| 0130-0018 | C:VAR CER 1.5-7 PF 500 | 72982 | 557-019-COP0-10R | 6 |
| 0140-0034 | C:FXD MICA 22 PF 5% 500 VDCW | 76433 | RCM15E220J | 1 |
| 0140-0069 | C:FXD MICA 550 PF 10% 500 VDCW | 00853 | TYPE M 100 E10 | 6 |
| 0140-0145 | C:FXD MICA 22 PF 5% 500 VDCW | 04062 | DM15C220J | 4 |
| 0140-0151 | C:FXD MICA 820PF 2% 300VDCW | 04062 | DM15F821G | 2 |
| 0140-0152 | C:FXD MICA 1000 PF 5% 300 VDCW | 04062 | DM16F102J | 1 |
| 0140-0159 | C:FXD MICA 3000PF 300VDCW | 04062 | DM19F302G | 2 |
| 0140-0177 | C:FXD MICA 400 PF 1% 300 VDCW | 04062 | DM15F401F(300V) | 16 |
| 0140-0178 | C:FXD MICA 560 PF 2% 300 VDCW | 04062 | DM15F561G 300V | 1 |
| 0140-0190 | C:FXD MICA 39 PF 5% 300 VDCW | 04062 | DM15E390J 300V | 2 |
| 0140-0192 | C:FXD MICA 68PF 5% 300VDCW | 04062 | DM15E680J | 7 |
| 0140-0202 | C:FXD MICA 15 PF 5% 500VDCW | 28480 | 0140-0202 | 2 |
| 0140-0204 | C:FXD MICA 47PF 5% NPO 500VDCW | 04062 | DM15E470J | 2 |
| 0140-0209 | C:FXD MICA 5PF 10% 500VDCW | 04062 | DM15C050K 500V | 1 |
| 0140-0214 | C:FXD MICA 60PF 5% 300VDCW | 04062 | DM15E600J 300V | 1 |
| 0140-0215 | C:FXD MICA 80PF 2% 300VDCW | 04062 | DM15E800G 300V | 6 |
| 0140-0220 | C:FXD MICA 200PF 1% 300VDCW | 04062 | DM15F201F 300V | 16 |
| 0140-0222 | C:FXD MICA 240PF 1% 300VDCW | 04062 | DM15F241F 300V | 8 |
| 0140-0225 | C:FXD MICA 300PF 1% 300VDCW | 04062 | DM15F301F 300V | 9 |
| 0140-0226 | C:FXD MICA 320PF 1% 300VDCW | 04062 | DM15F321F 300V | 16 |
| 0140-0230 | C:FXD MICA 420PF 1% 300VDCW | 04062 | DM15F421F 300V | 13 |
| 0140-0233 | C:FXD MICA 480PF 1% 300VDCW | 04062 | DM15F481F 300V | 8 |
| 0150-0042 | C:FXD TI 4.7 PF 5% 500 VDCW | 78488 | TYPE GA | 6 |
| 0150-0050 | C:FXD CER 1000PF 600 VDCW | 000RR | TYPE E | 16 |
| 0150-0055 | C:FXD TI 10 PF 5% 500 VDCW | 78488 | TYPE GA | 1 |
| 0150-0058 | C:FXD CER 2.2 PF +/- NPO 600 VDCW | 72982 | 301 000 COJO 229C | 4 |
| 0150-0059 | C:FXD CER 3.3 PF +/- NPO 600 VDCW | 72982 | 301 000 COJO 339C | 1 |
| 0150-0070 | C:FXD CER .02UF 20% 500VDCW | 72982 | 821010X | 2 |
| 0150-0093 | C:FXD CER 0.01UF +80-20% 100VDCW | 28480 | 0150-0093 | 6 |
| 0150-0111 | C:FXD CER 220PF 5% 300VDCW | 71590 | CB TR60 221J Q3M | 1 |
| 0150-0121 | C:FXD CER 0.1 UF 50VDCW | 56289 | 5C50A | 32 |
| 0160-0127 | C:FXD CER 1 UF 20% 25VDCW | 56289 | 5C13 | 4 |
| 0160-0141 | C:FXD CER 1500 PF 10% 500VDCW | 71590 | CF-152 | 2 |
| 0160-0174 | C:FXD CER 0.47UF +80-20% 25VDCW | 56289 | 5C11A | 1 |
| 0160-0178 | C:FXD MICA 27PF 5% | 28480 | 0160-0178 | 1 |
| 0160-0192 | C:FXD MICA 525 PF 5% | 28480 | 0160-0192 | 1 |
| 0160-C193 | C:FXD MICA 1125PF 5% | 28480 | 0160-0193 | 1 |
| 0160-C326 | C:FXD CER 2.2PF+/-0.1PF | 72982 | 374000 COKO 229B | 32 |
| 0160-0327 | C:FXD CER 3.4PF+/-0.1PF | 72982 | 374000 COJO 349B | 16 |
| 0160-0328 | C:FXD CER 4.6PF+/-0.1PF | 72982 | 374 COHO 469B | 16 |
| 0160-0329 | C:FXD CER 6.0PF+/-0.1PF | 72982 | 374000 COHO 609B | 8 |
| 0160-0330 | C:FXD CER 6.6PF +/-0.1PF | 72982 | 37400 COHO 669B | 16 |
| 0160-0332 | C:FXD MICA 133PF 1% | 28480 | 0160-0332 | 16 |
| 0160-0333 | C:FXD MICA 15PF +/-0.5PF | 28480 | 0160-0333 | 8 |
| 0160-0334 | C:FXD MICA 47PF 0.5% | 28480 | 0160-0334 | 7 |
| 0160-0335 | C:FXD MICA 91PF 1% | 28480 | 0160-0335 | 7 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-----------|--|-------|-------------------|-----|
| 0160-0336 | C:FXD MICA 100PF 1% | 28480 | 0160-0336 | 1 |
| 0160-0337 | C:FXD MICA 160PF 1% | 28480 | 0160-0337 | 16 |
| 0160-0338 | C:FXD MICA 267PF 1% | 28480 | 0160-0338 | 31 |
| 0160-0339 | C:FXD MICA 534PF 1% | 28480 | 0160-0339 | 22 |
| 0160-0340 | C:FXD MICA 600PF 1% | 28480 | 0160-0340 | 8 |
| 0160-0341 | C:FXD MICA 640PF 1% | 28480 | 0160-0341 | 16 |
| 0160-0342 | C:FXD MICA 800PF 1% | 28480 | 0160-0342 | 8 |
| 0160-0344 | C:FXD MICA 220PF 1% | 28480 | 0160-0344 | 16 |
| 0160-0345 | C:FXD CER 1000PF +80-20% 500VDCW FEED-THRU | 01121 | FB28-102W | 38 |
| 0160-0356 | C:FXD MICA 18PF 5% | 28480 | 0160-0356 | 1 |
| 0160-0357 | C:FXD CER 85PF 5% 500VDCW | 71590 | TB82850JSIG | 3 |
| 0160-0358 | C:FXD CER 94PF 5% 500VDCW | 71590 | TB82940JSIG | 2 |
| 0160-0359 | C:FXD CER 103PF 5% 500VDCW | 71590 | DA162-069J | 1 |
| 0160-0360 | C:FXD CER 120PF 5% 500VDCW | 71590 | DA163-022J | 1 |
| 0160-0368 | C:FXD MICA 16PF 5% | 28480 | 0160-0368 | 1 |
| 0160-0369 | C:FXD MICA 17PF 5% | 28480 | 0160-0369 | 1 |
| 0160-0370 | C:FXD MICA 20PF 5% | 28480 | 0160-0370 | 1 |
| 0160-0373 | C:FXD CER 1.6PF +/-0.1PF 600VDCW | 72982 | 301-000-COK0-169B | 1 |
| 0160-0374 | C:FXD CER 1.8PF +/-0.1PF 500VDCW | 72982 | 301-COK-189B | 1 |
| 0160-0375 | C:FXD CER 2.2PF +/-0.1PF 300VDCW | 72982 | 301-000-COJO-229B | 2 |
| 0160-2055 | C:FXD CER 0.01 UF +80-20% 100VDCW | 91418 | TA | 625 |
| 0180-0010 | C:FXD ELECT 8UF -15%+20% 30VDCW | 21520 | PP8B30A2 | 1 |
| 0180-0033 | C:FXD ELECT 50UF 6VDCW | 56289 | 300133A1 | 1 |
| 0180-0039 | C:FXD ELECT 100UF 12VDCW | 56289 | 300154A1 | 2 |
| 0180-0045 | C:FXD ELECT 20UF 25VDCW | 56289 | TYPE 300 | 1 |
| 0180-0049 | C:FXD ELECT 20UF 50VDCW | 56289 | 300198A1 | 2 |
| 0180-0058 | C:FXD ELECT 50UF -10%+100% 25VDCW | 56289 | TYPE 300186A1 | 2 |
| 0180-0061 | C:FXD ELECT 100UF +100%-10% 15VDCW | 56289 | 300172A1 | 1 |
| 0180-0098 | C:FXD ELECT 100UF 20% 20VDCW | 56289 | 1500107X002052 | 1 |
| 0180-0104 | C:FXD ELECT 200UF 15VDCW | 56289 | 300174A1 | 1 |
| 0180-0128 | C:FXD ELECT 3000UF -10+30% 30VDCW | 00853 | 505 1010 02 | 1 |
| 0180-0137 | C:FXD ELECT TA 100 UF 20% 10VDCW | 56289 | 1500107X0010R2 | 1 |
| 0180-0155 | C:FXD TA 2.2UF 20% 20VDCW | 56289 | 1500225X0020AZ | 1 |
| 0180-0159 | C:FXD ELECT 2200UF 10VDCW | 56289 | 1500227X0010S2 | 2 |
| 0180-0204 | C:FXD ALUM 2800 UF 40 VDCW +100 -10% | 05571 | 4S6430 | 1 |
| 0180-0205 | C:FXD ALUM. 12 UF -10 +75% 150VDCW | 05571 | 300126G1500H4 | 2 |
| 0340-0008 | INSULATOR:STANDOFF | 98291 | ST-1000-L2 | 2 |
| 0340-0036 | TERMINAL:STUD | 28480 | 0340-0036 | 5 |
| 0340-0037 | TERMINAL:STUD | 00866 | HP-3000M-2 | 2 |
| 0340-0038 | TERMINAL:STUD | 28480 | 0340-0038 | 12 |
| 0340-0039 | INSULATOR:BUSHING | 00866 | HP-3000T-1 | 19 |
| 0360-0351 | TERMINAL:LUG 3-TERMINAL | 71785 | 332-14-05-201 | 2 |
| 0360-0354 | TERMINAL:STUD | 71279 | 2267-1 | 5 |
| 0360-0357 | TERMINAL:FEED-THRU | 04013 | 3FU-5 | 2 |
| 0360-0358 | TERMINAL:PRESS-IN | 04013 | AS0-13 | 33 |
| 0370-0030 | KNOB: | 28480 | 0370-0030 | 1 |
| 0370-0112 | KNOB | 28480 | 0370-0112 | 2 |
| 0380-0059 | SPACER:SLEEVE BRS CP 0.250DX0.152IDX0.25 | 00866 | 080# | 8 |
| 0510-0123 | FASTENER:PUSH-ON TYPE | 78553 | C12008-014-4 | 1 |
| 0510-0124 | NUT:CAPTIVE 6-32 ST CP | 83324 | RPN 6-32 SC | 12 |
| 0510-0210 | NUT:CAPTIVE 8-32X15/32X0.265D | 07886 | NCN-8-3-3-12 | 6 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-----------|-------------------------------|-------|---------------|-----|
| 0510-0212 | FASTENER:H1-FREQ DECK | 15291 | EG-5-T-S-3-S | 2 |
| 0510-0213 | NUT:CAPTIVE SST 4-40 | 07886 | NCN-4-3-4-5 | 6 |
| 0683-1005 | R:FXD COMP 10 OHM 5% 1/4W | 01121 | CB 1005 | 1 |
| 0683-1015 | R:FXD COMP 100 OHM 5% 1/4W | 01121 | CB 1015 | 7 |
| 0683-1025 | R:FXD COMP 1000 OHM 5% 1/4W | 01121 | CB 1025 | 105 |
| 0683-1035 | R:FXD COMP 10K OHM 5% 1/4 W | 01121 | CB 1035 | 94 |
| 0683-1225 | R:FXD COMP 1200 OHM 5% 1/4W | 01121 | CB 1225 | 12 |
| 0683-1235 | R:FXD COMP 12K OHM 5% 1/4W | 01121 | CB 1235 | 2 |
| 0683-1325 | R:FXD COMP 1300 OHM 5% 1/4W | 01121 | CB 1325 | 6 |
| 0683-1515 | R:FXD COMP 150 OHM 5% 1/4W | 01121 | CB 1515 | 1 |
| 0683-1525 | R:FXD COMP 150 OHM 5% 1/4W | 01121 | CB 1525 | 86 |
| 0683-1815 | R:FXD COMP 180 OHM 5% 1/4W | 01121 | CB 1815 | 6 |
| 0683-1825 | R:FXD COMP 1800 OHM 5% 1/4W | 01121 | CB 1825 | 123 |
| 0683-2025 | R:FXD COMP 2000 OHM 5% 1/4W | 01121 | CB 2025 | 15 |
| 0683-2215 | R:FXD COMP 220 OHM 5% 1/4W | 01121 | CB 2215 | 7 |
| 0683-2225 | R:FXD COMP 2.2K OHM 5% 1/4W | 01121 | GB 2225 | 40 |
| 0683-2235 | R:FXD COMP 22K OHM 5% 1/4W | 01121 | CB 2235 | 11 |
| 0683-2425 | R:FXD COMP 2400 OHM 5% 1/4W | 01121 | CB 2425 | 31 |
| 0683-2715 | R:FXD COMP 270 OHM 5% 1/4W | 01121 | CB 2715 | 7 |
| 0683-2735 | R:FXD COMP 27K OHM 5% 1/4W | 01121 | CB 2735 | 3 |
| 0683-3015 | R:FXD COMP 300 OHM 5% 1/4W | 01121 | CB 3045 | 8 |
| 0683-3025 | R:FXD COMP 3000 OHM 5% 1/4W | 01121 | CB 3025 | 65 |
| 0683-3315 | R:FXD COMP 330 OHM 5% 1/4W | 01121 | CB 3315 | 12 |
| 0683-3325 | R:FXD COMP 3300 OHM 5% 1/4W | 01121 | CB 3325 | 4 |
| 0683-3625 | R:FXD COMP 3600 OHM 5% 1/4W | 01121 | CB 3625 | 22 |
| 0683-3905 | R:FXD COMP 39 OHM 5% 1/4W | 01121 | CB 3905 | 8 |
| 0683-3925 | R:FXD COMP 3900 OHM 5% 1/4W | 01121 | CB 3925 | 8 |
| 0683-4715 | R:FXD COMP 470 OHM 5% 1/4W | 01121 | CB 4715 | 14 |
| 0683-4725 | R:FXD COMP 4700 OHM 5% 1/4W | 01121 | CB 4725 | 10 |
| 0683-5105 | R:FXD COMP 51 OHM 5% 1/4W | 01121 | CB 5105 | 6 |
| 0683-5115 | R:FXD COMP 510 OHM 5% 1/4W | 01121 | CB 5115 | 6 |
| 0683-5625 | R:FXD COMP 560 OHM 5% 1/4W | 01121 | CB 5625 | 9 |
| 0683-6215 | R:FXD COMP 620 OHM 5% 1/4W | 01121 | CB 6215 | 6 |
| 0683-6805 | R:FXD COMP 68 OHM 5% 1/4W | 01121 | CB 6805 | 1 |
| 0683-6825 | R:FXD COMP 6800 OHM 5% 1/4W | 01121 | CB 6825 | 1 |
| 0683-7515 | R:FXD COMP 750 OHM 5% 1/4W | 01121 | CB 7515 | 22 |
| 0683-8215 | R:FXD COMP 820 OHM 5% 1/4W | 01121 | CB 8215 | 1 |
| 0686-3905 | R:FXD COMP 39 OHM 5% 1/2W | 01121 | EB 3905 | 2 |
| 0687-3331 | R:FXD COMP 33K OHM 10% 1/2W | 01121 | EB 3331 | 1 |
| 0698-3122 | R:FXD MET FLM 412 OHM 1% 1/8W | 28480 | 0698-3122 | 2 |
| 0721-0004 | R:FXD DEPC 100K OHM 1% 1/8W | 28480 | 0721-0004 | 1 |
| 0727-0012 | R:FXD DEPC 20 OHM 1% 1/2W | 28480 | 0727-0012 | 2 |
| 0727-0036 | R:FXD DEPC 71.16 OHM 1% 1/2W | 28480 | 0727-0036 | 6 |
| 0727-0109 | R:FXD DEPC 1470 OHM 1% 1/2W | 28480 | 0727-0109 | 1 |
| 0727-0112 | R:FXD DEPC 1800 OHM 1% 1/2W | 28480 | 0727-0112 | 1 |
| 0727-0115 | R:FXD DEPC 2000 OHM 1% 1/2W | 28480 | 0727-0115 | 1 |
| 0727-0137 | R:FXD DEPC 5.18K OHM 1% 1/2W | 28480 | 0727-0137 | 1 |
| 0727-0189 | R:FXD DEPC 41.7K OHM 1% 1/2W | 28480 | 0727-0189 | 2 |
| 0757-0074 | R:FXD MET OX 430 OHM 2% 1/2W | 28480 | 0757-0074 | 2 |
| 0757-0076 | R:FXD MFT FLM 560 OHM 2% 1/2W | 07115 | C 20 | 6 |

= See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| # Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-------------|----------------------------------|-------|-----------------|----|
| 0757-0079 | R:FXD MET FLM 2700 OHM 2% 1/2W | 07115 | C 20 | 2 |
| 0757-0086 | R:FXD MET FLM 51 OHM 2% 1/2W | 07115 | C 20 | 2 |
| 0757-0091 | R:FXD MET FLM 18K OHM 2% 1/2W | 07115 | C 20 | 2 |
| 0757-0092 | R:FXD MET FLM 33K OHM 2% 1/2W | 07115 | C 20 | 1 |
| 0757-0197 | R:FXD MET FLM 1.5K OHM 1% 1/2W | 75042 | CEC T-0 | 1 |
| 0757-0269 | R:FXD MET FLM 270 OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0270 | R:FXD MET FLM 249K OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0271 | R:FXD MET FLM 124K OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0273 | R:FXD MET FLM 3.01K OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0274 | R:FXD MET FLM 1.21K OHM 1% 1/8W | 28480 | 0757-0274 | 1 |
| 0757-0275 | R:FXD MET FLM 113 OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0277 | R:FXD MET FLM 49.9 OHM 1% 1/8W | 28480 | 0757-0277 | 2 |
| 0757-0279 | R:FXD MET FLM 3.16K OHM 1% 1/8W | 19701 | CEA | 1 |
| 0757-0280 | R:FXD MET FLM 1000 OHM 1% 1/8W | 19701 | CEA | 8 |
| 0757-0281 | R:FXD MET FLM 2.74K OHM 1% 1/8W | 19701 | CEA | 8 |
| 0757-0282 | R:FXD MET FLM 221 OHM 1% 1/8W | 19701 | CEA | 8 |
| 0757-0283 | R:FXD MET FLM 2000 OHM 1% 1/8W | 19701 | CEA | 8 |
| 0757-0284 | R:FXD MET FLM 150 OHM 1% 1/8W | 19701 | CEA | 23 |
| 0757-0287 | R:FXD MET FLM 499 OHM 1% 1/2W | 19701 | MF7C-T2 | 1 |
| 0757-0288 | R:FXD MET FLM 9.09K OHM 1% 1/8W | 19701 | MF6C-T0 | 2 |
| 0757-0289 | R:FXD MET FLM 13.3K OHM 1% 1/8W | 19701 | MF5C-T0 | 2 |
| 0757-0290 | R:FXD MET FLM 6.19K OHM 1% 1/8W | 19701 | MF5C-T0 | 4 |
| 0757-0294 | R:FXD MET FLM 17.8 OHM 1% 1/8W | 28480 | 0757-0294 | 1 |
| 0757-0295 | R:FXD MET FLM 11.5 OHM 1% 1/8W | 28480 | 0757-0295 | 1 |
| 0757-0296 | R:FXD MET FLM 200 OHM 2% 1/2W | 07115 | C 20 | 2 |
| 0757-0297 | R:FXD MET FLM 300 OHM 2% 1/2W | 28480 | 0757-0297 | 2 |
| 0757-0298 | R:FXD MET FLM 22K OHM 2% 1/2W | 07115 | C 20 | 6 |
| 0757-0316 | R:FXD MET FLM 42.2 OHM 1% 1/8W | 28480 | 0757-0316 | 1 |
| 0757-0344 | R:FXD MET FLM 1.00MEGOHM 1% 1/4W | 28480 | 0757-0344 | 1 |
| 0757-0368 | R:FXD MET FLM 34.0 OHM 1% 1/8W | 28480 | 0757-0368 | 2 |
| 0757-0377 | R:FXD MET FLM 1.62K OHM 1% 1/8W | 28480 | 0757-0377 | 1 |
| 0757-0398 | R:FXD MET FLM 75 OHM 1% 1/8W | 28480 | 0757-0398 | 1 |
| 0757-0914 | R:FXD MET FLM 390 OHM 2% 1/8W | 28480 | 0757-0914 | 1 |
| 0758-0002 | R:FXD MET FLM 560 OHM 5% 1/2W | 07115 | C 20 | 5 |
| 0758-0003 | R:FXD MET FLM 1000 OHM 5% 1/2W | 07115 | C 20/1K-5%-1/2W | 25 |
| 0758-0004 | R:FXD MET FLM 2700 OHM 5% 1/2W | 07115 | C 20 | 2 |
| 0758-0006 | R:FXD MET FLM 10K OHM 5% 1/2W | 07115 | C 20 | 3 |
| 0758-0007 | R:FXD MET FLM 150 OHM 5% 1/2W | 07115 | C 20 | 7 |
| 0758-0009 | R:FXD MET FLM 6800 OHM 5% 1/2W | 07115 | C 20 | 3 |
| 0758-0010 | R:FXD MET FLM 3300 OHM 5% 1/2W | 28480 | 0758-0010 | 3 |
| 0758-0012 | R:FXD MET FLM 12K OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0015 | R:FXD MET FLM 220 OHM 5% 1/2W | 07115 | C 20 | 3 |
| 0758-0017 | R:FXD MET FLM 1500 OHM 5% 1/2W | 07115 | C 20 | 9 |
| 0758-0018 | R:FXD MET FLM 15K OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0024 | R:FXD MET FLM 100 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0028 | R:FXD MET FLM 270 OHM 5% 1/2W | 07115 | C 20 | 4 |
| 0758-0031 | R:FXD MET FLM 680 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0033 | R:FXD MET FLM 2000 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0035 | R:FXD MET FLM 3000 OHM 5% 1/2W | 07115 | C 20 | 3 |
| 0758-0036 | R:FXD MET FLM 3600 OHM 5% 1/2W | 07115 | C 20 | 2 |
| 0758-0043 | R:FXD MET FLM 1800 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0044 | R:FXD MET FLM 2200 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0045 | R:FXD MET FLM 3900 OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0053 | R:FXD MET FLM 100K OHM 5% 1/2W | 07115 | C 20 | 2 |
| 0758-0054 | R:FXD MET FLM 330 OHM 5% 1/2W | 07115 | C 20 | 2 |
| 0758-0057 | R:FXD MET FLM 5600 OHM 5% 1/2W | 07115 | C 20 | 4 |

* See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-----------|--|-------|-----------------|----|
| 0758-0066 | R:FXD MET FLM 620 OHM 5% 1/2W | 07115 | C 20 | 4 |
| 0758-0071 | R:FXD MET FLM 4300 OHM 5% 1/2W | 07115 | C 20 | 2 |
| 0758-0073 | R:FXD MET FLM 24K OHM 5% 1/2W | 07115 | C 20 | 1 |
| 0758-0083 | R:FXD MET OX 68 OHM 5% 1/2W | 07115 | C20 | 2 |
| 0758-0093 | R:FXD MET OX 56 OHM 5% 1/2W | 28480 | 0758-0093 | 11 |
| 0758-0094 | R:FXD MET OX 62 OHM 5% 1/2W | 28480 | 0758-0094 | 5 |
| 0812-0017 | R:FXD WW 0.25 OHM 5% 3W | 35434 | VTA 3 | 2 |
| 0839-0029 | RESISTOR:TEMPERATURE-SENSITIVE 14K OHM | 17109 | M709-113 | 6 |
| 0900-0034 | GASKET:SILICONE RUBBER 1-7/16IDx1-5/8OD | 28480 | 0900-0034 | 1 |
| 1120-0152 | MICROAMMETER:100 MICROAMPERES | 28480 | 1120-0152 | 1 |
| 1200-0043 | INSULATOR:TRANSISTOR ANODIZED ALUMINUM | 76530 | 294457 | 2 |
| 1200-0076 | INSULATOR:TRANSISTOR | 02735 | DF 14A | 2 |
| 1200-0081 | BUSHING:INSULATOR NYLON | 26365 | 974SPECIAL | 4 |
| 1200-0087 | CLAMP:TRANSISTOR | 02735 | DF-13-A | 2 |
| 1200-0092 | BUSHING:TRANSISTOR | 02735 | 495334 1 | 2 |
| 1205-0012 | HEAT DISSIPATOR:SEMICONDUCTOR | 28480 | 1205-0012 | 3 |
| 1205-0025 | NUT:HEAT DISSIPATOR | 13103 | 1101A-1 | 2 |
| 1205-0026 | HEAT DISSIPATOR:BODY | 28480 | 1205-0026 | 2 |
| 1205-0031 | HEAT SINK:TRANSISTOR | 28480 | 1205-0031 | 6 |
| 1250-0066 | CONNECTOR:BNC JACK | 28480 | 1250-0066 | 1 |
| 1250-0083 | CONNECTOR:BNC | 91737 | UG-1094/U | 23 |
| 1250-0118 | CONNECTOR:BNC | 91737 | 8427 | 2 |
| 1250-0123 | CONNECTOR:BNC | 91737 | UG-1-94/U NI RH | 1 |
| 1250-0149 | CONNECTOR:RF COAXIAL BNC RT-ANGLE RECEPT | 91737 | UG-1174/U | 3 |
| 1250-0212 | CONNECTOR:JACK CHASSIS BNC | 91737 | 11656 | 41 |
| 1250-0214 | CONNECTOR:BNC JACK | 28480 | 1250-0214 | 1 |
| 1251-0143 | CONNECTOR:FEMALE 14-CONTACT JACK | 02660 | 57-40140 | 2 |
| 1251-0194 | CONNECTOR:PRINTED CIRCUIT 15-CONTACT | 95354 | SD-615TS | 1 |
| 1251-0216 | CONNECTOR:MALE 9-CONTACT TYPE D | 71468 | DEM-9P | 2 |
| 1251-0382 | CONNECTOR:12-TERMINAL | 28480 | 1251-0382 | 1 |
| 1251-0384 | CONNECTOR:SUBMINAT TYPE D 9-CONTACT FEMALE | 71785 | DEM-F-9A | 2 |
| 1251-0424 | CONNECTOR:MALE SINGLE BANANA | 78947 | 1251-0424 | 16 |
| 1400-0010 | CLIP:ELECTRICAL PH BRZ NP 13/32X3/8X1/2 | 71400 | 4550 | 4 |
| 1400-0084 | FUSEHOLDER:EXTRACTOR POST TYPE | 75915 | 342014 | 2 |
| 1400-0109 | CLIP:MOUNTING | 91506 | 7109-1C | 3 |
| 1400-0117 | CLIP:MOUNTING | 99378 | 100-320-3 | 4 |
| 1400-0155 | SPRING:RETAINING | 28480 | 1400-0155 | 40 |
| 1450-0048 | LAMP:NEON | 08717 | 858-R | 1 |
| 1460-0164 | SPRING:HELICAL 0.25X0.30 0.022D WIRE | 91260 | 0BD | 1 |
| 1490-0030 | STAND:TILT | 28480 | 1490 0030 | 1 |
| 1850-0020 | TRANSISTOR:GERMANIUM 2N1143 PNP | 01295 | 2N1143 | 6 |
| 1850-0062 | TRANSISTOR:GERMANIUM SPL 2N404 | 28480 | 1850-0062 | 15 |
| 1850-0064 | TRANSISTOR:GERMANIUM 2N1183 PNP | 02735 | 2N1183 | 1 |
| 1850-0075 | TRANSISTOR:GERMANIUM 2N779A PNP | 87216 | 2N779A | 9 |
| 1850-0091 | TRANSISTOR:GERMANIUM 2N2048 PNP | 87216 | 2N2048 | 28 |
| 1850-0098 | TRANSISTOR:GERMANIUM PNP SELECTED | 28480 | 1850-0098 | 2 |
| 1850-0118 | TRANSISTOR:PNP GERMANIUM EIA 2N2360 | 82767 | 2N2360 | 62 |
| 1850-0119 | TRANSISTOR:PNP GERMANIUM EIA 2N963 | 04713 | 2N963 | 13 |
| 1850-0138 | TRANSISTOR-PNP GERMANIUM EIA 2N2360 | 28480 | 1850-0138 | 7 |
| 1850-0121 | TRANSISTOR:GERMANIUM PNP 2N2402 | 87216 | 2N2402 | 6 |
| 1850-0152 | TRANSISTOR:GERMANIUM PNP | 28480 | 1850-0152 | 2 |
| 1850-0153 | TRANSISTOR:GERMANIUM PNP | 28480 | 1850-0153 | 1 |
| 1250-0027 | CONNECTOR:BNC | 91737 | 5321 | 95 |
| 1250-0037 | PIN(FOR BNC CONNECTOR) | 91737 | 11960-19 | 95 |
| 1250-0041 | CONNECTOR:NUT | 91737 | 5321-14 | 95 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-----------|--|-------|---------------|-----|
| 1851-0017 | TRANSISTOR:2N1304 | 01295 | 2N1304 | 3 |
| 1853-0001 | TRANSISTOR:PNP SILICON 30V 900MW | 28480 | 1853 0001 | 3 |
| 1854-0003 | TRANSISTOR:NPN SILICON | 28480 | 1854-0003 | 3 |
| 1854-0005 | TRANSISTOR:2N708 NPN SILICON | 07263 | 2N708 | 4 |
| 1854-0019 | TRANSISTOR:SILICON NPN | 28480 | 1854-0019 | 6 |
| 1854-0020 | TRANSISTOR:NPN SILICON | 28480 | 1854-0020 | 2 |
| 1900-0011 | SEMICON DEVICE:DIODE 1N416BM MATCH PAIR | 93332 | 1N416BM | 2 |
| 1901-0025 | SEMICON DEVICE:DIODE JUNCTION | 28480 | 1901 0025 | 114 |
| 1901-0026 | SEMICON DEVICE:DIODE SILICON 200PIV | 28480 | 1901-0026 | 4 |
| 1901-0040 | SEMICON DEVICE:DIODE SILICON | 28480 | 1901-0040 | 22 |
| 1901-0049 | SEMICON DEVICE:DIODE SILICON | 28480 | 1901 C049 | 8 |
| 1901-0127 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | 28480 | 1901-0127 | 3 |
| 1901-0128 | SEMICON DEVICE:DIODE SILICON STEP-RECOVERY | 28480 | 1901-0128 | 3 |
| 1902-0058 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0058 | 1 |
| 1902-0059 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0059 | 1 |
| 1902-0060 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0060 | 1 |
| 1902-0061 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0061 | 1 |
| 1902-0079 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0079 | 1 |
| 1902-0080 | SEMICON DEVICE:DIODE SILICON | 28480 | 1902-0080 | 1 |
| 1902-0126 | SEMICON DEVICE:DIODE BREAKDOWN 2.61 V | 28480 | 1902-0126 | 4 |
| 1902-0769 | DIODE BREAKDOWN:5.3/5.7V 400MW | 28480 | 1902-0769 | 2 |
| 1910-0016 | SEMICON DEVICE:DIODE GERMANIUM | 93332 | D2361 | 264 |
| 1910-0022 | SEMICON DEVICE:DIODE GE 100MA 6PIV 3.5NS | 28480 | 1910-0022 | 32 |
| 1910-0029 | SEMICON DEVICE:DIODES GERM. MATCHED PR. | 93332 | D3177 | 32 |
| 1910-0030 | SEMICON DEVICE:DIODE GERMANIUM | 28480 | 1910-0030 | 5 |
| 2100-0024 | R:VAR COMP 1000 OHM 10% LIN 2W | 28480 | 2100-0024 | 1 |
| 2100-0108 | R:VAR COMP LIN 100 OHM 10% 1/3W | 11237 | WPE70 | 1 |
| 2100-0277 | R:VAR COMP 100 OHM 20% LIN 0.3W | 28480 | 2100-0277 | 1 |
| 2100-0325 | R:VAR WW 100 OHM 10% LIN 1/4W | 28480 | 2100-L.25 | 2 |
| 2100-0737 | R:VAR WW 200 OHM TYPE H CONFIGURATION | 28480 | 2100-0737 | 1 |
| 2100-0741 | R:VAR WW 5K OHM 5% | 28480 | 2100-0741 | 2 |
| 2100-0755 | R:VAR WW 1000 OHM 5% | 28480 | 2100-0755 | 1 |
| 2100-0806 | R:VAR WW 5K OHM 5% | 28480 | 2100-0806 | 3 |
| 2100-0941 | R:VAR WW 1000 OHM 5% | 28480 | 2100-0941 | 6 |
| 2100-1429 | R:VAR WW 2000 OHM 5% 1W | 28480 | 2100-1429 | 1 |
| 2110-0012 | FUSE:CARTRIDGE 1/2 AMP 250V | 75915 | 312500 | 1 |
| 2110-0027 | FUSE:CARTRIDGE 1/8 AMP 250V SLOW BLOW | 75915 | 312.125 | 1 |
| 2110-0033 | FUSE: 0.75AMP 250V | 79515 | F02GR750A | 2 |
| 3040-0037 | PIN:DRIVE RH SST 3/16 | 28480 | 3040-0037 | 6 |
| 3100-0500 | SWITCH:ROTARY | 28480 | 3100-0500 | 1 |
| 3100-0701 | SWITCH:ROTARY | 28480 | 3100-0701 | 1 |
| 3101-0033 | SWITCH:SLIDE DPDT | 42190 | 4633 | 1 |
| 3101-0038 | SWITCH:TOG DPDT 3 AMP 125 V | 04009 | 83054-B | 3 |
| 3104-0005 | SWITCH:PUSHBUTTON | 28480 | 3104-0005 | 1 |
| 3104-0006 | SWITCH:PUSHBUTTON | 28480 | 3104-0006 | 1 |
| 3104-0007 | SWITCH:PUSHBUTTON | 28480 | 3104-0007 | 8 |
| 5020-0241 | SUPPORT:ETCHED CIRCUIT BOARD | 28480 | 5020-0241 | 2 |
| 8120-0078 | CABLE POWER:7.5FT. | 70903 | KH4147 | 1 |
| 9100-0175 | TRANSFORMER:POWER | 28 80 | 9100-0175 | 1 |
| 9110-0054 | FILTER-BANDPASS 330 MC | 28480 | 9110-0054 | 1 |
| 9110-0055 | FILTER-BANDPASS 350 MC | 28480 | 9110-0055 | 1 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|------------|--------------------------------|-------|---------------|-----|
| 9110-0056 | FILTER-BANDPASS 360 MC | 28480 | 9110-0056 | 2 |
| 9110-0057 | FILTER-BANDPASS 370 MC | 28480 | 9110-0057 | 1 |
| 9110-0058 | FILTER-BANDPASS 380 MC | 28480 | 9110-0058 | 1 |
| 9110-0059 | FILTER-BANDPASS 390 MC | 28480 | 9110-0059 | 1 |
| 9110-0060 | FILTER-BANDPASS 395 MC | 28480 | 9110-0060 | 1 |
| 9110-0086 | FILTER:ELECTRICAL POWER LINE | 28480 | 9110-0086 | 1 |
| 9140-0018 | COIL:FXD 1UH | 28480 | 9140-0018 | 7 |
| 9140-0024 | COIL:FXD 0.68 UH | 28480 | 9140-0024 | 2 |
| 9140-0080 | COIL:RF. 0.18 MH 10% | 95265 | NB-0.18-P | 2 |
| 9140-0088 | INDUCTOR:RF 0.33UH 5% | 95265 | NB.33-P | 2 |
| 9140-0094 | COIL:FXD RF 0.68UH | 99800 | 1537-08 | 1 |
| 9140-0095 | COIL:FXD RF 0.27UH | 28480 | 9140-0095 | 12 |
| 9140-0096 | COIL:FXD RF 1 UH | 28480 | 9140-0096 | 10 |
| 9140-0114 | COIL:FXD RF 10 UH | 28480 | 9140-0114 | 38 |
| 9140-0115 | COIL:FXD RF 22UH 10% | 99800 | 2150-32 | 6 |
| 9140-0120 | COIL:FXD 0.1 UH | 28480 | 9140 0120 | 5 |
| 9140-0137 | COIL:FXD RF 100 UH | 28480 | 9140-0137 | 2 |
| 9140-0141 | COIL:FXD RF 0.68 UH | 28480 | 9140-0141 | 1 |
| 9140-0159 | COIL:FXD 0.47UH 20% | 99800 | 1025-SERIES | 7 |
| 9140-0176 | COIL-FXD R.F. 4 UH 5%250 MA | 99800 | TYPE 1537 | 8 |
| 9140-0177 | COIL-FXD R.F. 8 UH 5% 500 MA | 99800 | TYPE 1537 | 8 |
| 9140-0178 | COIL-FXD R.F. 12 UH 10% 375 MA | 99800 | 1537-38 | 30 |
| 9140-0179 | COIL-FXD R.F. 22 UH 10% 275 MA | 99800 | 1537-44 | 208 |
| 9140-0180 | COIL:FXD 2.7UH 10% | 99800 | 1537-22 | 1 |
| 9140-0181 | COIL:FXD RF 22UH 5% | 78526 | 12201M | 8 |
| 9140-0188 | COIL:FXD 0.56UH 10% | 99800 | 1840-07 | 1 |
| 9170-0042 | COIL:VAR 0.27-0.41UH | 95265 | NCF1M | 1 |
| 9170-0105 | CORE:ADJUSTABLE TUNING | 95566 | A1-464 NO WAX | 101 |
| 9170-0106 | CORE:ADJUSTABLE TUNING | 28480 | 9170-0106 WAX | 23 |
| 05100-0001 | COVER:METER AMPLIFIER | 28480 | 05100-0001 | 1 |
| 05100-0002 | BRACKET | 28480 | 05100-0002 | 1 |
| 05100-0003 | BRACKET | 28480 | 05100-0003 | 1 |
| 05100-0004 | COVER | 28480 | 05100-0004 | 1 |
| 05100-0005 | COVER | 28480 | 05100-0005 | 1 |
| 05100-0007 | COVER:CONNECTOR BLOCK | 28480 | 05100-0007 | 1 |
| 05100-0010 | BRACKET-DECade | 28480 | 05100-0010 | 8 |
| 05100-0011 | COVER | 28480 | 05100-0011 | 1 |
| 05100-0012 | COVER- MULTIPLIER 33/330 MC | 28480 | 05100-0012 | 1 |
| 05100-0013 | FRAME | 28480 | 05100-0013 | 1 |
| 05100-0014 | FRAME | 28480 | 05100-0014 | 1 |
| 05100-0015 | FRAME- AMPLIFIER | 28480 | 05100-0015 | 1 |
| 05100-0018 | BRACKET-END | 28480 | 05100-0018 | 8 |
| 05100-0019 | COVER-DECade (#1) | 28480 | 05100-0019 | 1 |
| 05100-0020 | SHIELD | 28480 | 05100-0020 | 10 |
| 05100-0021 | FRAME | 28480 | 05100-0021 | 1 |
| 05100-0022 | COVER- AMPLIFIER | 28480 | 05100-0022 | 1 |
| 05100-0023 | BAR-LOCKING | 28480 | 05100-0023 | 1 |
| 05100-0025 | BRACKET-CABLE | 28480 | 05100-0025 | 1 |
| 05100-0026 | BRACKET-SEARCH OSC. | 28480 | 05100-0026 | 1 |
| 05100-0027 | COVER-SEARCH OSC. | 28480 | 05100-0027 | 1 |

= See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| # Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-------------|-----------------------------------|-------|---------------|----|
| 05100-0041 | COVER-PWR. SUPPLY | 28480 | 05100-0041 | 1 |
| 05100-0042 | BRACKET-FRONT | 28480 | 05100-0042 | 1 |
| 05100-0043 | DECK-POWER SUPPLY | 28480 | 05100-0043 | 1 |
| 05100-0044 | BRACKET-SHIELD | 28480 | 05100-0044 | 1 |
| 05100-0045 | BRACKET- TRANSFORMER | 28480 | 05100-0045 | 1 |
| 05100-0046 | BRACKET- REAR GUIDE | 28480 | 05100-0046 | 1 |
| 05100-0047 | BRACKET- FRONT GUIDE | 28480 | 05100-0047 | 1 |
| 05100-0048 | COVER- BOARD | 28480 | 05100-0048 | 1 |
| 05100-0058 | GASKET TOP(3-4 MC SWITCH) | 28480 | 05100-0058 | 1 |
| 05100-0059 | GASKET BOTTOM(3-4 MC SWITCH) | 28480 | 05100-0059 | 1 |
| 05100-0060 | GASKET-TOP COVER(30-39 MC SWITCH) | 28480 | 05100-0060 | 1 |
| 05100-0067 | GUARD-SWITCH | 28480 | 05100-0067 | 1 |
| 05100-0068 | SHIELD-FILTER | 28480 | 05100-0068 | 1 |
| 05100-0070 | PLATE-SEARCH OSC. | 28480 | 05100-0070 | 1 |
| 05100-0073 | COVER-DECADe | 28480 | 05100-0073 | 7 |
| 05100-0080 | COVER- MULTIPLIER 35/350 | 28480 | 05100-0080 | 1 |
| 05100-0081 | COVER- MULTIPLIER 36/360 MC | 28480 | 05100-0081 | 1 |
| 05100-0082 | COVER- MULTIPLIER 37/370 MC | 28480 | 05100-0082 | 1 |
| 05100-0083 | COVER- MULTIPLIER 38/380 MC | 28480 | 05100-0083 | 1 |
| 05100-0084 | COVER- MULTIPLIER 39/390 MC | 28480 | 05100-0084 | 1 |
| 05100-2001 | BLANK BOARD | 28480 | 05100-2001 | 8 |
| 05100-2002 | BLANK BOARD | 28480 | 05100-2002 | 7 |
| 05100-2003 | BLANK BOARD | 28480 | 05100-2003 | 2 |
| 05100-2004 | BOARD: METER AMP. | 28480 | 05100-2004 | 1 |
| 05100-2005 | BOARD- 24MC AMP. | 28480 | 05100-2005 | 1 |
| 05100-2006 | BLANK BOARD-OSCILLATOR | 28480 | 05100-2006 | 1 |
| 05100-2007 | BLANK BOARD-OUTPUT | 28480 | 05100-2007 | 1 |
| 05100-2008 | BLANK BOARD | 28480 | 05100-2008 | 1 |
| 05100-2009 | BLANK BOARD | 28480 | 05100-2009 | 1 |
| 05100-2010 | BLANK BOARD | 28480 | 05100-2010 | 1 |
| 05100-2011 | BLANK BOARD- SWITCH | 28480 | 05100-2011 | 10 |
| 05100-2012 | BLANK BOARD-OUTPUT | 28480 | 05100-2012 | 1 |
| 05100-2013 | BOARD-BLANK | 28480 | 05100-2013 | 1 |
| 05100-2014 | BLANK BOARD | 28480 | 05100-2014 | 1 |
| 05100-2015 | BLANK BOARD | 28480 | 05100-2015 | 1 |
| 05100-2016 | BLANK BOARD | 28480 | 05100-2016 | 1 |
| 05100-2017 | BLANK BOARD | 28480 | 05100-2017 | 1 |
| 05100-2018 | BLANK BOARD | 28480 | 05100-2018 | 1 |
| 05100-2019 | BOARD- MULTIPLIER | 28480 | 05100-2019 | 1 |
| 05100-2020 | BLANK BOARD- MULTIPLIER | 28480 | 05100-2020 | 4 |
| 05100-2021 | BLANK BOARD- MULTIPLIER | 28480 | 05100-2021 | 1 |
| 05100-2022 | HOUSING-30/39 MC SWITCH | 28480 | 05100-2022 | 1 |
| 05100-2023 | COVER-SWITCH, BOTTOM | 28480 | 05100-2023 | 1 |
| 05100-2024 | COVER-SWITCH, TOP | 28480 | 05100-2024 | 1 |
| 05100-2025 | PIN- PIVOT | 28480 | 05100-2025 | 2 |
| 05100-2026 | PLATE- RIGHT END | 28480 | 05100-2026 | 1 |
| 05100-2027 | PLATE- END, AMPLIFIER | 28480 | 05100-2027 | 1 |
| 05100-2028 | PLATE- END | 28480 | 05100-2028 | 1 |
| 05100-2029 | BLOCK:DECADe CONNECTOR | 28480 | 05100-2029 | 1 |
| 05100-2030 | HOUSING:3-4 MC SWITCH | 28480 | 05100-2030 | 1 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|------------|---------------------------------|-------|---------------|----|
| 05100-2031 | HOUSING-350-390 MC SWITCH | 28480 | 05100-2031 | 1 |
| 05100-2032 | CONNECTOR-DECade | 28480 | 05100-2032 | 8 |
| 05100-2033 | BAR-FRONT DECADE | 28480 | 05100-2033 | 8 |
| 05100-2034 | BAR-REAR DECADE | 28480 | 05100-2034 | 8 |
| 05100-2035 | BAR-SWITCH | 28480 | 05100-2035 | 1 |
| 05100-2036 | ROD-SWITCH LOCKING | 28480 | 05100-2036 | 1 |
| 05100-2037 | BAR-RETAINING | 28480 | 05100-2037 | 1 |
| 05100-2038 | SPACER-SWITCH | 28480 | 05100-2038 | 2 |
| 05100-2039 | STRIP-GROUND | 28480 | 05100-2039 | 16 |
| 05100-2040 | PLATE-SIDE | 28480 | 05100-2040 | 1 |
| 05100-2041 | COVER-350-390 MC SWITCH | 28480 | 05100-2041 | 1 |
| 05100-2043 | COVER-TOP | 28480 | 05100-2043 | 1 |
| 05100-2044 | COVER-BOTTOM | 28480 | 05100-2044 | 1 |
| 05100-2045 | BRACKET- REAR | 28480 | 05100-2045 | 1 |
| 05100-2046 | MTG.-CAPACITOR | 28480 | 05100-2046 | 1 |
| 05100-2047 | BOARD-ETCHED CKT. | 28480 | 05100-2047 | 1 |
| 05100-2048 | BAR- MTG. | 28480 | 05100-2048 | 1 |
| 05100-2049 | SUPPORT- SWITCH | 28480 | 05100-2049 | 1 |
| 05100-2053 | PIN-GUIDE | 28480 | 05100-2053 | 2 |
| 05100-2055 | PLATE-RIGHT END | 28480 | 05100-2055 | 1 |
| 05100-2056 | PLATE-END | 28480 | 05100-2056 | 4 |
| 05100-2057 | BLANK-BOARD | 28480 | 05100-2057 | 1 |
| 05100-2061 | BUSHING- LATCH | 28480 | 05100-2061 | 2 |
| 05100-2063 | LATCH- DECK | 28480 | 05100-2063 | 1 |
| 05100-2065 | BRACKET-SWITCH | 28480 | 05100-2065 | 1 |
| 05100-4010 | CLAMP- FILTER | 28480 | 05100-4010 | 16 |
| 05100-6001 | MIXER/DIVIDER MODULE 3.0-3.1 MC | 28480 | 05100-6001 | 7 |
| 05100-6002 | FILTER ASSY. 30-31 MC MIXER | 28480 | 05100-6002 | 1 |
| 05100-6003 | ASSY.- PUSHBUTTON SWITCH | 28480 | 05100-6003 | 1 |
| 05100-6004 | CONNECTOR BLOCK MODULE | 28480 | 05100-6004 | 1 |
| 05100-6005 | SEARCH OSCILLATOR MODULE | 28480 | 05100-6005 | 1 |
| 05100-6006 | 3-4 MC SWITCH MODULE | 28480 | 05100-6006 | 1 |
| 05100-6007 | POWER SUPPLY MODULE | 28480 | 05100-6007 | 1 |
| 05100-6010 | 30 TO 39 MC SWITCH MODULE | 28480 | 05100-6010 | 1 |
| 05100-6011 | 350 TO 390 MC SWITCH MODULE | 28480 | 05100-6011 | 1 |
| 05100-6012 | 1ST UHF MIXER MODULE | 28480 | 05100-6012 | 1 |
| 05100-6013 | 2ND UHF MIXER MODULE | 28480 | 05100-6013 | 1 |
| 05100-6014 | 3RD UHF MIXER MODULE | 28480 | 05100-6014 | 1 |
| 05100-6015 | OUTPUT AMPLIFIER MODULE | 28480 | 05100-6015 | 1 |
| 05100-6016 | 39 TO 390 MC MULTIPLIER MODULE | 28480 | 05100-6016 | 1 |
| 05100-6017 | 38 TO 380 MC MULTIPLIER MODULE | 28480 | 05100-6017 | 1 |
| 05100-6018 | 37 TO 370 MC MULTIPLIER MODULE | 28480 | 05100-6018 | 1 |
| 05100-6019 | 36 TO 360 MC MULTIPLIER MODULE | 28480 | 05100-6019 | 1 |
| 05100-6020 | 35 TO 350 MC MULTIPLIER MODULE | 28480 | 05100-6020 | 1 |
| 05100-6021 | 33 TO 330 MC MULTIPLIER MODULE | 28480 | 05100-6021 | 1 |
| 05100-6023 | ASSY.-DECade MIXER BD. | 28480 | 05100-6023 | 9 |
| 05100-6024 | BOARD ASSY.-DECade DIVIDER | 28480 | 05100-6024 | 7 |
| 05100-6025 | BOARD ASSEMBLY-EMITTER FOLLOWER | 28480 | 05100-6025 | 2 |
| 05100-6026 | BOARD ASSEMBLY-METER AMPLIFIER | 28480 | 05100-6026 | 1 |
| 05100-6027 | BOARD ASSEMBLY-24MC AMPLIFIER | 28480 | 05100-6027 | 1 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|------------|-----------------------------------|-------|---------------|----|
| 05100-6028 | OSCILLATOR-BOARD ASSY. | 28480 | 05100-6028 | 1 |
| 05100-6029 | OUTPUT BOARD ASSY. | 28480 | 05100-6029 | 1 |
| 05100-6030 | ASSY.- 3-4 MC SWITCH BD. | 28480 | 05100-6030 | 11 |
| 05100-6031 | BOARD ASSY.- RECTIFIER | 28480 | 05100-6031 | 1 |
| 05100-6032 | BOARD ASSY.- REGULATOR | 28480 | 05100-6032 | 1 |
| 05100-6033 | BOARD ASSY.-SWITCH | 28480 | 05100-6033 | 10 |
| 05100-6034 | OUTPUT BOARD- 30/39 MC SWITCH | 28480 | 05100-6034 | 1 |
| 05100-6036 | BOARD ASSY.- 38/380 MC | 28480 | 05100-6036 | 1 |
| 05100-6037 | BOARD ASSY.- 36/360 MC MULTIPLIER | 28480 | 05100-6037 | 1 |
| 05100-6038 | BOARD ASSY.- 33/330 MC | 28480 | 05100-6038 | 1 |
| 05100-6039 | BOARD ASSY.- MIXER | 28480 | 05100-6039 | 1 |
| 05100-6040 | BOARD ASSY.- FILTER | 28480 | 05100-6040 | 1 |
| 05100-6041 | BOARD ASSY.- UHF: 2ND MIXER | 28480 | 05100-6041 | 1 |
| 05100-6042 | BOARD ASSY.- FILTER: 2ND MIXER | 28480 | 05100-6042 | 1 |
| 05100-6043 | BOARD ASSY.- UHF | 28480 | 05100-6043 | 1 |
| 05100-6044 | BOARD ASSY.- OUTPUT AMPLIFIER | 28480 | 05100-6044 | 1 |
| 05100-6047 | ASSY.-DECADE FILTER BD. | 28480 | 05100-6047 | 2 |
| 05100-6051 | CABLE ASSY.-3-4MC | 28480 | 05100-6051 | 1 |
| 05100-6052 | CABLE ASSY.&HI-FREQ. | 28480 | 05100-6052 | 1 |
| 05100-6053 | ASSY.-CABLE 3-4(1) | 28480 | 05100-6053 | 1 |
| 05100-6054 | ASSY.-CABLE 3-4(2) | 28480 | 05100-6054 | 1 |
| 05100-6055 | CABLE ASSY.-REMOTE | 28480 | 05100-6055 | 1 |
| 05100-6059 | CAP. & COIL ASSY. | 28480 | 05100-6059 | 2 |
| 05100-6060 | CABLE ASSY.-POWER SUPPLY | 28480 | 05100-6060 | 2 |
| 05100-6061 | COVER ASSY.- BOTTOM | 28480 | 05100-6061 | 1 |
| 05100-6062 | COVER ASSY.- TOP | 28480 | 05100-6062 | 1 |
| 05100-6063 | STRAP- GROUND | 28480 | 05100-6063 | 1 |
| 05100-6065 | CABLE ASSY.- OUTPUT INCLUDES J4 | 28480 | 05100-6065 | 1 |
| 05100-6066 | ASSY.- OUTPUT JUMPER CABLE | 28480 | 05100-6066 | 1 |
| 05100-6067 | ASSY.- HI-LEVEL OUT CABLE | 28480 | 05100-6067 | 1 |
| 05100-6068 | ASSY.- LO-LEVEL OUT CABLE | 28480 | 05100-6068 | 1 |
| 05100-6069 | ASSY.-CABLE 30 MC OUT | 28480 | 05100-6069 | 1 |
| 05100-6070 | ASSY.-CABLE 30 MC CONNECT | 28480 | 05100-6070 | 8 |
| 05100-6071 | ASSY.-CABLE BUSS FREQ. | 28480 | 05100-6071 | 8 |
| 05100-6072 | ASSY.-CABLE 3 MC OUT | 28480 | 05100-6072 | 7 |
| 05100-6073 | ASSY.-CABLE 12.6V | 28480 | 05100-6073 | 8 |
| 05100-6074 | ASSY.-CABLE 6.3V | 28480 | 05100-6074 | 8 |
| 05100-6076 | ASSY.-CABLE 3 MC & 24 MC | 28480 | 05100-6076 | 16 |
| 05100-6078 | ASSY.-CLAMP | 28480 | 05100-6078 | 23 |
| 05100-6100 | CABLE- MIXER #3 INPUT | 28480 | 05100-6100 | 1 |
| 05100-6102 | CABLE ASSY.- DELAY LINE | 28480 | 05100-6102 | 1 |
| 05100-6103 | CABLE ASSY.-30 MC OUTPUT | 28480 | 05100-6103 | 1 |
| 05100-6104 | CABLE- TRANSFER #1 (A) | 28480 | 05100-6104 | 1 |
| 05100-6105 | CABLE- TRANSFER #2 (B) | 28480 | 05100-6105 | 1 |
| 05100-6106 | CABLE- TRANSFER #3 (C) | 28480 | 05100-6106 | 1 |
| 05100-6107 | CABLE- TRANSFER #4 (D) | 28480 | 05100-6107 | 1 |
| 05100-6108 | CABLE- TRANSFER #5 (E) | 28480 | 05100-6108 | 1 |
| 05100-6109 | CABLE- TRANSFER #6 (F) | 28480 | 05100-6109 | 1 |
| 05100-6110 | CABLE- TRANSFER #7 (G) | 28480 | 05100-6110 | 1 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|------------|----------------------------------|-------|---------------|----|
| 05100-6111 | CABLE- TRANSFER #8 (H) | 28480 | 05100-6111 | 1 |
| 05100-6112 | CABLE ASSY.- +6.3V CONNECT | 28480 | 05100-6112 | 8 |
| 05100-6113 | CABLE ASSY.- INTERCONNECT | 28480 | 05100-6113 | 7 |
| 05100-6114 | CABLE ASSY.- 12.6V CONNECT | 28480 | 05100-6114 | 8 |
| 05100-6115 | CABLE ASSY.-24MC CONNECT | 28480 | 05100-6115 | 5 |
| 05100-6116 | CABLE ASSY.-24 MC BUSS | 28480 | 05100-6116 | 3 |
| 05100-6117 | ASSY.- 24 MC INPUT CABLE | 28480 | 05100-6117 | 1 |
| 05100-6118 | ASSY.- 3 MC INPUT CABLE | 28480 | 05100-6118 | 1 |
| 05100-6119 | CABLE- 33MC MULTIPLIER INPUT (A) | 28480 | 05100-6119 | 1 |
| 05100-6120 | CABLE- 35MC MULTIPLIER INPUT (B) | 28480 | 05100-6120 | 1 |
| 05100-6121 | CABLE- 36MC MULTIPLIER INPUT (C) | 28480 | 05100-6121 | 1 |
| 05100-6122 | CABLE- 37MC MULTIPLIER INPUT (D) | 28480 | 05100-6122 | 1 |
| 05100-6123 | CABLE- 38MC MULTIPLIER INPUT (E) | 28480 | 05100-6123 | 1 |
| 05100-6124 | CABLE- 39MC MULTIPLIER INPUT (F) | 28480 | 05100-6124 | 1 |
| 05100-6125 | CABLE- 330 MC OUTPUT | 28480 | 05100-6125 | 1 |
| 05100-6126 | CABLE- 350 MC OUTPUT (A) | 28480 | 05100-6126 | 1 |
| 05100-6127 | CABLE- 360 MC OUTPUT (B) | 28480 | 05100-6127 | 1 |
| 05100-6128 | CABLE- 370 MC OUTPUT (C) | 28480 | 05100-6128 | 1 |
| 05100-6129 | CABLE- 380 MC OUTPUT (D) | 28480 | 05100-6129 | 1 |
| 05100-6130 | CABLE- 30 MC OUTPUT(E) | 28480 | 05100-6130 | 1 |
| 05100-6131 | CABLE- MIXER # 2 OUTPUT | 28480 | 05100-6131 | 1 |
| 05100-6132 | CABLE-MIXER #3 OUTPUT | 28480 | 05100-6132 | 1 |
| 05100-6133 | CABLE-MIXER #1 OUTPUT | 28480 | 05100-6133 | 1 |
| 05100-6134 | ASSY.- SEARCH OSC. OUT CABLE | 28480 | 05100-6134 | 1 |
| 05100-6159 | CABLE- 390 MC OUTPUT (F) | 28480 | 05100-6159 | 1 |
| 05100-6161 | BOARD ASSY.- 37/370 MC | 28480 | 05100-6161 | 1 |
| 05100-6162 | BOARD ASSY.- 35/350 MC | 28480 | 05100-6162 | 1 |
| 05100-6163 | TRANSFORMER- INPUT DOUBLER | 28480 | 05100-6163 | 6 |
| 05100-6164 | CHASSIS ASSY.- MULTIPLIER | 28480 | 05100-6164 | 6 |
| 05100-6165 | BOARD ASSY.- FILTER | 28480 | 05100-6165 | 1 |
| 05100-6166 | COIL-VARIABLE .16-.23UH | 28480 | 05100-6166 | 88 |
| 05100-6167 | TRANSFORMER-VARIABLE | 28480 | 05100-6167 | 7 |
| 05100-6168 | COIL-VARIABLE 50-90UH | 28480 | 05100-6168 | 7 |
| 05100-6169 | TRANSFORMER-FIXED | 28480 | 05100-6169 | 7 |
| 05100-6170 | COIL-VARIABLE 3.5-5.5UH | 28480 | 05100-6170 | 7 |
| 05100-6171 | ASSY.-OSC. COIL 26UH | 28480 | 05100-6171 | 1 |
| 05100-6172 | TRANSFORMER-1.7UH | 28480 | 05100-6172 | 16 |
| 05100-6174 | COIL ASSY.-VARIABLE .27-.35UH | 28480 | 05100-6174 | 1 |
| 05100-6175 | CABLE- OSC PROGRAMMING (1) | 28480 | 05100-6175 | 1 |
| 05100-6176 | ASSY.- WELDING, HI FREQ. DECK | 28480 | 05100-6176 | 1 |
| 05100-6177 | CABLE- BUSS FREQUENCY | 28480 | 05100-6177 | 1 |
| 05100-6178 | CABLE ASSY. MULTIPLIER OUTPUT | 28480 | 05100-6178 | 1 |
| 05100-6179 | TRANSFORMER-VARIABLE | 28480 | 05100-6179 | 1 |
| 05100-6180 | CABLE ASSY.- DECADE TEST | 28480 | 05100-6180 | 1 |
| 05100-6181 | CABLE- MULTIPLIER INPUT | 28480 | 05100-6181 | 1 |
| 05100-6182 | COUPLER-30MC | 28480 | 05100-6182 | 1 |
| 05100-6183 | COIL ASSY.- VARIABLE | 28480 | 05100-6183 | 1 |
| 05100-6184 | CABLE ASSY.-3MC | 28480 | 05100-6184 | 1 |
| 05100-6186 | COIL ASSY.- VARIABLE .16-.23UH | 28480 | 05100-6186 | 12 |
| 05100-6187 | TRANSISTOR ASSY.- 12.6V | 28480 | 05100-6187 | 1 |

See list of abbreviations in introduction to this section

Table 6-21. Replaceable Parts Cont'd.

| # Stock No. | Description # | Mfr. | Mfr. Part No. | TQ |
|-------------|--|-------|---------------|----|
| 05100-6188 | TRANSISTOR ASSY.- 6.3V | 28480 | 05100-6188 | 1 |
| 05100-6190 | CABLE ASSY.- 3.0MC INTER-CONNECT (A) | 28480 | 05100-6190 | 1 |
| 05100-6191 | CABLE ASSY.- 3.1MC INTER-CONNECT (B) | 28480 | 05100-6191 | 1 |
| 05100-6192 | CABLE ASSY.- 3.2MC INTER-CONNECT (C) | 28480 | 05100-6192 | 1 |
| 05100-6193 | CABLE ASSY.- 3.3MC INTER-CONNECT (D) | 28480 | 05100-6193 | 1 |
| 05100-6194 | CABLE ASSY.- 3.4MC INTER-CONNECT (E) | 28480 | 05100-6194 | 1 |
| 05100-6195 | CABLE ASSY.- 3.5MC INTER-CONNECT (F) | 28480 | 05100-6195 | 1 |
| 05100-6196 | CABLE ASSY.- 3.6MC INTER-CONNECT (G) | 28480 | 05100-6196 | 1 |
| 05100-6197 | CABLE ASSY.- 3.7MC INTER-CONNECT (H) | 28480 | 05100-6197 | 1 |
| 05100-6198 | CABLE ASSY.- 3.8MC INTER-CONNECT (I) | 28480 | 05100-6198 | 1 |
| 05100-6199 | CABLE ASSY.- 3.9MC INTER-CONNECT (J) | 28480 | 05100-6199 | 1 |
| 05100-6200 | CABLE ASSY.- 30 MC INTER-CONNECT (A) | 28480 | 05100-6200 | 1 |
| 05100-6201 | CABLE ASSY.- 31 MC INTER-CONNECT (B) | 28480 | 05100-6201 | 1 |
| 05100-6202 | CABLE ASSY.- 32 MC INTER-CONNECT (C) | 28480 | 05100-6202 | 1 |
| 05100-6203 | CABLE ASSY.- 33 MC INTER-CONNECT (D) | 28480 | 05100-6203 | 1 |
| 05100-6204 | CABLE ASSY.- 34 MC INTER-CONNECT (E) | 28480 | 05100-6204 | 1 |
| 05100-6205 | CABLE ASSY.- 35 MC INTER-CONNECT (F) | 28480 | 05100-6205 | 1 |
| 05100-6206 | CABLE ASSY.- 36 MC INTER-CONNECT (G) | 28480 | 05100-6206 | 1 |
| 05100-6207 | CABLE ASSY.- 37 MC INTER-CONNECT (H) | 28480 | 05100-6207 | 1 |
| 05100-6208 | CABLE ASSY.- 38 MC INTER-CONNECT (I) | 28480 | 05100-6208 | 1 |
| 05100-6209 | CABLE ASSY.- 39 MC INTER-CONNECT (J) | 28480 | 05100-6209 | 1 |
| 05100-6210 | CABLE ASSY.- 24MC INTER-CONNECT(K) | 28480 | 05100-6210 | 1 |
| 05100-6211 | CABLE ASSY.- INITIAL 3MC INTERCONNECT(L) | 28480 | 05100-6211 | 1 |
| 05100-6212 | CABLE ASSY.- LO FREQ. INTERCONNECT | 28480 | 05100-6212 | 1 |
| 05100-6213 | CABLE ASSY.- HI FREQ. INTERCONNECT | 28480 | 05100-6213 | 1 |
| 05100-6214 | COIL ASSY: 4.7 UH | 28480 | 05100-6214 | |
| 05100-8003 | TRANSFORMER- PUMP INPUT | 28480 | 05100-8003 | 1 |
| 05100-8004 | TRANSFORMER- PUMP INPUT | 28480 | 05100-8004 | 1 |
| 05100-8005 | COIL-VARIABLE | 28480 | 05100-8005 | 1 |
| 05100-8006 | COIL-VARIABLE | 28480 | 05100-8006 | 1 |
| 05100-8007 | TRANSFORMER-MIXER OUT | 28480 | 05100-8007 | 1 |
| 05100-8008 | TRANSFORMER-AMP. OUTPUT | 28480 | 05100-8008 | 1 |
| 05100-8009 | TRANSFORMER-FINAL OUTPUT | 28480 | 05100-8009 | 1 |
| 05100-8010 | TRANSFORMER- MIXER OUTPUT | 28480 | 05100-8010 | 1 |
| 05100-8011 | TRANSFORMER- FINAL OUTPUT | 28480 | 05100-8011 | 1 |
| 05100-8018 | COIL- FILTER .115UH | 28480 | 05100-8018 | 1 |

See list of abbreviations in introduction to this section

Table 6-22. Code List of Manufacturers

The following code numbers are from the Federal Supply Code for Manufacturers Cataloging Handbooks H4-1 (Name to Code) and H4-2 (Code to Name) and their latest supplements. The date of revision and the date of the supplements used appear at the bottom of each page. Alphabetical codes have been arbitrarily assigned to suppliers not appearing in the H4 handbooks.

| Code No. | Manufacturer | Address | Code No. | Manufacturer | Address | Code No. | Manufacturer | Address | Code No. | Manufacturer | Address |
|--|--|------------------|---|----------------------------------|-----------------------|--|-----------------------------|---------|---|-----------------------------|------------------|
| 00109 U.S.A. Common | Any supplier of U.S. | | 07137 Transistor Electronics Corp. | Minneapolis, Minn. | | 20183 General Atronics Corp. | Philadelphia, Pa. | | 72825 Hugh H. Eby Inc. | Philadelphia, Pa. | |
| 00116 McCay Electronics | Mount Holly Springs, Pa. | | 07138 Westinghouse Electric Corp. | Electronic Tube Div. | Etna, N.Y. | 21226 Executone Co. | New York, N.Y. | | 72924 Gudeman Co. | Chicago, Ill. | |
| 00213 Sage Electronics Corp. | Rochester, N.Y. | | 07149 Filman Corp. | New York, N.Y. | | 21520 Fansleel Metallurgical Corp. | No. Chicago, Ill. | | 72964 Robert M. Hadley Co. | Los Angeles, Calif. | |
| 00334 Humidif | Cotton, Calif. | | 07233 Cinch-Graphic Co. | City of Industry, Calif. | | 21335 The Fahrn Bearing Co. | New Britain, Conn. | | 72982 Erie Technological Products, Inc. | Erie, Pa. | |
| 00373 Garlock Inc., | | | 07261 Avnet Corp. | Los Angeles, Calif. | | 24455 G.E. Lamp Division | Nela Park, Cleveland, Ohio | | 73061 Hansen Mfg. Co., Inc. | Princeton, Ind. | |
| Electronics Products Div. | Camden, N.J. | | 07263 Fairchild Camera & Inst. Corp. | Semiconductor Div. | Mountain View, Calif. | 24655 General Radio Co. | West Concord, Mass. | | 73076 H.M. Hauper Co. | Chicago, Ill. | |
| 00656 Aerovox Corp. | New Bedford, Mass. | | 07322 Minnesota Rubber Co. | Minneapolis, Minn. | | 26365 Gries Reproducer Corp. | New Rochelle, N.Y. | | 73138 Helipot Div. of Beckman Inst., Inc. | Fullerton, Calif. | |
| 00779 Amp. Inc. | Harrisburg, Pa. | | 07387 The Butcher Corp. | Los Angeles, Calif. | | 26462 Grobet File Co. of America, Inc. | | | 73293 Hughes Products Division of | | |
| 00781 Aircraft Radio Corp. | Bonnoton, N.J. | | 07700 Continental Wire Products Inc. | Cranford, N.J. | | 26992 Hamilton Watch Co. | Carlstadt, N.J. | | Hughes Aircraft Co. | Newport Beach, Calif. | |
| 00815 Northern Engineering Laboratories, Inc. | Burlington, Wis. | | 07910 Continental Device Corp. | Hawthorne, Calif. | | 28480 Hewlett-Packard Co. | Lancaster, Pa. | | 73445 Amperex Electronic Co., Div. of North | American Phillips Co., Inc. | Hicksville, N.Y. |
| 00853 Sangamo Electric Co., | Pickens, S.C. | | 07933 Raytheon Mfg. Co. | Semiconductor Device | Mountain View, Calif. | 31317 G.E. Receiving Tube Dept. | Owensboro, Ky. | | 73506 Bradley Semiconductor Corp. | Hamden, Conn. | |
| 00866 Goe Engineering Co. | Los Angeles, Calif. | | 07966 Shockley Semi-Conductor | Laboratories | Palo Alto, Calif. | 35434 Lechtman Inc. | Chicago, Ill. | | 73559 Cailing Electric, Inc. | Hartford, Conn. | |
| 00891 Carl E. Holmes Corp. | Los Angeles, Calif. | | 07980 Banton Radio Corp. | Rockaway, N.J. | | 36196 Stanwyck Coil Products Ltd. | Hawkesbury, Ontario, Canada | | 73662 George K. Garrett Co., Div. | | |
| 01121 Alien Bradley Corp. | Milwaukee, Wis. | | 08145 U.S. Engineering Co. | Los Angeles, Calif. | | 37942 P.R. Mallory & Co., Inc. | Indianapolis, Ind. | | 73734 Federal Siew Products Inc. | Philadelphia, Pa. | |
| 01255 Litton Industries, Inc. | Beverly Hills, Calif. | | 08239 Blinn Delbert Co. | Pomona, Calif. | | 39543 Mechanical Industries Prod. Co. | Akron, Ohio | | 73743 Fischer Special Mfg. Co. | Cincinnati, Ohio | |
| 01281 TRW Semiconductors, Inc. | Lawndale, Calif. | | 08358 Burgess Battery Co. | Niagara Falls, Ontario, Canada | | 40720 Miniature Precision Bearings, Inc. | Keene, N.H. | | 73793 The General Industries Co. | Elyria, Ohio | |
| 01295 Texas Instruments, Inc. | Titanistors Products Div. | Dallas, Texas | 08664 The Bristol Co. | Watertown, Conn. | | 42190 Motor Co. | Chicago, Ill. | | 73846 Gosden Stamping & Tool Co. | Goshen, Ind. | |
| 01349 The Alliance Mfg. Co. | Alliance, Ohio | | 08717 Sloane Company | Sun Valley, Calif. | | 43950 C.A. Norgren Co. | Englewood, Colo. | | 73859 J.F.D. Electronics Corp. | Brooklyn, N.Y. | |
| 01589 Pacific Relays, Inc. | Van Nuys, Calif. | | 08718 ITT Cannon Electric Inc., Phoenix Div. | Phoenix, Arizona | | 44655 Ohmite Mfg. Co. | Skokie, Ill. | | 73905 Jennings Radio Mfg. Corp. | San Jose, Calif. | |
| 01930 Amercock Corp. | Rockford, Ill. | | 08792 CBS Electronics Semiconductor | Operations, Div. of C.B.S., Inc. | Lowell, Mass. | 47904 Polaroid Corp. | Cambridge, Mass. | | 74276 Signaling Inc. | Neptune, N.J. | |
| 01961 Pulse Engineering Co. | Santa Clara, Calif. | | 08984 McRae | Indianapolis, Ind. | | 48620 Precision Thermometer & Inst. Co. | | | 74455 J.H. Winn's and Sons | Winchester, Mass. | |
| 02114 Ferrocore Corp. of America | Saugerties, N.Y. | | 09026 Babcock Relays Div. | Costa Mesa, Calif. | | 49956 Raytheon Company | Southampton, Pa. | | 74861 Industrial Condenser Corp. | Chicago, Ill. | |
| 02286 Cole Rubber and Plastics Inc. | Palo Alto, Calif. | | 09134 Texas Capacitor Co. | Houston, Texas | | 52920 Rowan Controller Co. | Lexington, Mass. | | 74868 R.F. Products Division of Amphenol | | |
| 02660 Amphenol-Borg Electronics Corp. | Chicago, Ill. | | 09250 Electro Assemblies, Inc. | Sun Valley, Calif. | | 52983 Sanborn Co. | Westminster, Md. | | Bog Electronics Corp. | Danbury, Conn. | |
| 02735 Radio Corp. of America, Semiconductor and Materials Div. | Somerville, N.J. | | 09359 Battery Co., Ltd. | Toronto, Ontario, Canada | | 52984 Shallcross Mfg. Co. | Walham, Mass. | | 74970 E.F. Johnson Co. | Waseca, Minn. | |
| 02771 Varicore Co. of America, Inc. | Old Saybrook, Conn. | | 10214 General Transistor Western Corp. | Los Angeles, Calif. | | 53026 Simpson Electric Co. | Selma, N.C. | | 75042 International Resistance Co. | Philadelphia, Pa. | |
| 02777 Hopkins Engineering Co., San Fernando, Calif. | | | 10411 Ti-Tal, Inc. | Berkeley, Calif. | | 55933 Sotolite Corp. | Chicago, Ill. | | 75378 James Knights Co. | Sandwich, Ill. | |
| 03500 C.E. Semiconductor Prod. Dept., Syracuse, N.Y. | | | 10646 Carborundum Co. | Niagara Falls, N.Y. | | 55938 Raytheon Co., Commercial Apparatus & | Elmsford, N.Y. | | 75382 Kulkos Electric Corporation | Mt. Vernon, N.Y. | |
| 03705 Ace Machin & Tool Co. | Dayton, Ohio | | 11235 CTS of Bene, Inc. | Geneva, Ind. | | 56137 Spalding Fibre Co., Inc. | So. Norwalk, Conn. | | 75818 Lenz Electric Mfg. Co. | Chicago, Ill. | |
| 03797 Eldena Corp. | Coatpao, Calif. | | 11237 Chicago Telephone of California, Inc. | So. Pasadena, Calif. | | 56283 Sprague Electric Co. | Towanda, N.Y. | | 75915 Lillefouse, Inc. | Des Plaines, Ill. | |
| 03877 Transition Electric Corp. | Wakefield, Mass. | | 11242 Bay State Electronics Corp. | Walham, Mass. | | 59445 Telex, Inc. | St. Paul, Minn. | | 76005 Lord Mfg. Co. | Erie, Pa. | |
| 03882 Pyrolim Resistor Co., Inc. | Cedai Knolls, N.J. | | 11243 Microwave Electronics Corp. | Palo Alto, Calif. | | 59730 Thomas & Bults Co. | Elizabeth, N.J. | | 76210 C.W. Mawadet | San Francisco, Calif. | |
| 03954 Singer Corp., Diehl Div. | Fundine Plant | Somerville, N.J. | 11244 Duncan Electronics Inc. | Costa Mesa, Calif. | | 60741 Tripplett Electrical Inst. Co. | Bethel, Ohio | | 76433 General Instrument Corp. | Newark, N.J. | |
| 04009 Arrow, Hart and Hegeman Elect. Co. | Haiford, Conn. | | 11245 General Instrument Corp., Semiconductor Div. | Newark, N.J. | | 61775 Union Switch and Signal, Div. of | Westinghouse Air Brake Co. | | 76487 James Miller Mfg. Co., Inc. | Malden, Mass. | |
| 04013 Tatus Corp. | Lamberville, N.J. | | 11246 Products Group | So. Pasadena, Calif. | | 62119 Universal Electric Co. | Bethel, Ohio | | 76493 J.W. Miller Co. | Los Angeles, Calif. | |
| 04062 Elmetco Products Co. | New York, N.Y. | | 11247 Imperial Electronic, Inc. | Bueno Park, Calif. | | 63743 Ward-Legrand Electric Co. | Osso, Mich. | | 76530 Monadnock Mills | San Leandro, Calif. | |
| 04222 HQ-Division of Aerovox | Myrtle Beach, S.C. | | 11248 Melex Electronics Corp. | Clark, N.J. | | 64595 Western Electric Co., Inc. | Mt. Vernon, N.Y. | | 76545 Mueller Electric Co. | Cleveland, Ohio | |
| 04354 Precision Paper Tube Co. | Chicago, Ill. | | 11249 Nippon Electric Co., Ltd. | Tokyo, Japan | | 65092 Weston Inst. Div. of Daysstrom, Inc. | New York, N.Y. | | 77068 The Bendix Corp. | Crystal Lake, Ill. | |
| 04404 Dynac Division of Hewlett-Packard Co. | Palo Alto, Calif. | | 11250 Delta Semiconductor Inc. | Newport Beach, Calif. | | 66295 Wittek Mfg. Co. | Newark, N.J. | | 77068 Bendix Pacific Div. | No. Hollywood, Calif. | |
| 04651 Sylvania Electric Products, Inc. | Microwave Dev. Div., Mountain View, Calif. | | 11251 Philadelphia Handle Co. | Camden, N.J. | | 66346 Revere Wollanak Div., Munn, Mining & | Chicago, Ill. | | 77075 Pacific Metals Co. | San Francisco, Calif. | |
| 04713 Motorola, Inc., Semiconductor Prod. Div. | Phoenix, Arizona | | 11252 Clarostat Mfg. Co. | Dover, N.H. | | 70276 Allen Mfg. Co. | Halford, Conn. | | 77221 Phanostrom Instrument and | South Pasadena, Calif. | |
| 04732 Fibon Co., Inc., Western Div. | Culver City, Calif. | | 11253 Duncan Electronics Inc. | Costa Mesa, Calif. | | 70301 Allen Mfg. Co. | Halford, Conn. | | 77252 Philadelphia Steel and Wire Corp. | Philadelphia, Pa. | |
| 04773 Anamonic Electric Co. | Rosehake, Ill. | | 11254 General Instrument Corp., Semiconductor Div. | Kansas City, Kansas | | 70318 Alimental Screw Product Co., Inc. | Garden City, N.Y. | | 77342 American Machine & Foundry Co. | Princeton, Ind. | |
| 04796 Sequona Wnic Co. | Redwood City, Calif. | | 11255 Sem-Tech | Newbury Park, Calif. | | 70485 Atlantic India Rubber Works, Inc. | Chicago, Ill. | | 77630 TRW Electronic Components Div. | Canden, N.J. | |
| 04811 Precision Coil Spring Co. | El Monte, Calif. | | 11256 Cali. Resist. Corp. | Santa Monica, Calif. | | 70563 Amperle Co., Inc. | Union City, N.J. | | 77638 General Instrument Corp., Recycler Div. | | |
| 04820 P.M. Motor Company | Westchester, Ill. | | 11257 Thermalloy | Dallas, Texas | | 70621 Belden Mfg. Co. | Chicago, Ill. | | 77764 Resistance Products Co. | Harrisburg, Pa. | |
| 05006 Twentieth Century Plastics, Inc. | Los Angeles, Calif. | | 11258 Deltavacuum Corp. | Long Island City, N.Y. | | 70988 Birt Electronic Corp. | Cleveland, Ohio | | 77969 Ruberclraft Corp. of Calif. | Torrence, Calif. | |
| 05277 Westinghouse Electric Corp., Semi-Conductor Dept. | Youngwood, Pa. | | 11259 Midland-Wright Div. of Pacific Industries, Inc. | Kansas City, Kansas | | 71002 Bimba Radio Co. | New York, N.Y. | | 78189 Shakeproof Division of Illinois | | |
| 05347 Ulticon, Inc. | San Mateo, Calif. | | 11260 Sem-Tech | Newbury Park, Calif. | | 71043 Boston Gear Works Div. of | Quincy, Mass. | | 78283 Tool Works | Elgan, III. | |
| 05593 Illinoistron Engineering Co. | Sunnyvale, Calif. | | 11261 Calli. Resist. Corp. | Santa Monica, Calif. | | 71218 Bud Radio, Inc. | Willoughby, Ohio | | 78285 Signal Indicator Corp. | New York, N.Y. | |
| 05616 Cosmo Plastic (c/o Electrical Spec. Co.) | Cleveland, Ohio | | 11262 American Components, Inc. | Conshohocken, Pa. | | 71286 Cambic Fastener Corp. | Paramus, N.J. | | 78290 Stuthers-Dunn Inc. | Pittman, N.J. | |
| 05624 Barber Colman Co. | Rockford, Ill. | | 11263 Amico Inc. | Long Island City, N.Y. | | 71303 Cardwell Condenser Corp. | Lindenhurst L.I., N.Y. | | 78452 Thompson-Biemer & Co. | Chicago, Ill. | |
| 05728 Tiffen Optical Co. | Roslyn Heights, Long Island, N.Y. | | 11264 Amico Corp. | Long Island City, N.Y. | | 71400 Bussmann Mfg. Div. of | St. Louis, Mo. | | 78471 Tilley Mfg. Co. | San Francisco, Calif. | |
| 05729 Meto-Tel Corp. | Plainview, N.Y. | | 11265 Amico Corp. | Long Island City, N.Y. | | 71436 McGraw-Edison Co. | Chicago, Ill. | | 78488 Stackpole Cabon Co. | St. Marys, Pa. | |
| 05783 Stewart Engineering Co. | Santa Cruz, Calif. | | 11266 Amico Corp. | Long Island City, N.Y. | | 71447 Clark Spring Co., Inc. | Pitt-Rivers, Calif. | | 78493 Standard Thomson Corp. | Walhain, Mass. | |
| 05820 Wakefield Engineering Inc. | Wakefield, Mass. | | 11267 Amico Corp. | Long Island City, N.Y. | | 71450 CTS Corp. | Elkhart, Ind. | | 78553 Timmerman Products, Inc. | Cleveland, Ohio | |
| 06004 The Bassick Co. | Bridgewater, Conn. | | 11268 Computer Diode Corp. | Lodi, N.J. | | 71463 ITT Cannon Electric Inc. | Los Angeles, Calif. | | 78750 Transformer Engineers | San Gabriel, Calif. | |
| 06175 Bausch and Lomb Optical Co. | Rochester, N.Y. | | 11269 Ideal Prec. Meter Co., Inc. | De Jui Meter Div. | | 71471 Cinema Engineering Co. | Burbank, Calif. | | 78947 Uxline Co. | Newtownville, Mass. | |
| 06402 C.T.A. Products Co. of America | Chicago, Ill. | | 11270 McChaw-Edison Co. | Long Island City, N.Y. | | 71482 C.P. Clare & Co. | Chicago, Ill. | | 79142 Walles Kohnoor Inc. | Long Island City, N.Y. | |
| 06475 Western Devices Inc. | Burbank, Calif. | | 11271 Spruce Pine Mica Co. | Spruce Pine, N.C. | | 71509 Centralab Div. of Globe Union Inc. | West Orange, N.J. | | 79142 Veeder Root, Inc. | Hartford, Conn. | |
| 06540 Amazon Electronic Hardware Co., Inc. | New Rochelle, N.Y. | | 11272 Teletronix Corp. | Long Island City, N.Y. | | 71516 Commercial Plastics Co. | Milwaukee, Wis. | | 79215 Wenco Mfg. Co. | Chicago, Ill. | |
| 06555 Beede Electrical Instrument Co., Inc. | Penacook, N.H. | | 11273 Triaxel Company | Mountain View, Calif. | | 71700 The Cornish Ware Co. | Chicago, Ill. | | 79272 Continental-Wil Electronics Corp. | Philadelphia, Pa. | |
| 06666 General Devices Co., Inc. | Indianapolis, Ind. | | 11274 Trianex Corp. | Hoffnung, Mass. | | 71704 Chicago Miniature Lamp Works | Chicago, Ill. | | 79963 Zierick Mfg. Corp. | New Rochelle, N.Y. | |
| 06751 Nuclear Corp. of America | Phoenix, Ariz. | | 11275 U.S. Sensor Div. | Des Plaines, Ill. | | 71744 A.O. Smith Corp., Crowley Div. | West Orange, N.J. | | 80031 Mepco Division of Sessions | | |
| 06812 Torington Mfg. Co., West Div. | Van Nuys, Calif. | | 11276 V-G Corp. | Long Island City, N.Y. | | 71785 Cinch Mfg. Co., Howard B. Jones Div. | Chicago, Ill. | | 80110 Clock Co. | Montgomery, N.J. | |
| 06860 Eitel-McCullough Inc. | San Carlos, Calif. | | 11277 V-G Corp. | Long Island City, N.Y. | | 71786 Dow Corning Corp. | Midland, Mich. | | 80120 Schnitzer Alloy Products Co. | Elizabeth, N.J. | |
| 07088 Kelvin Electric Co. | Van Nuys, Calif. | | 11278 V-G Corp. | Long Island City, N.Y. | | 72136 Electro Motive Mfg. Co., Inc. | Willimantic, Conn. | | 80130 Times Telephone Equipment | New York, N.Y. | |
| 07115 Corning Glass Works | Electron Components Dept. | Bridford, Pa. | 11279 V-G Corp. | Long Island City, N.Y. | | 72170 Cole Coil Co., Inc. | Piobvidence, R.I. | | 80131 Electronic Industries Association | Any brand | |
| 07126 Digitron Co. | Pasadena, Calif. | | 11280 V-G Corp. | Long Island City, N.Y. | | 72354 John E. Fast Co., Div. Victoreen Inst. Co. | Chicago, Ill. | | 80207 Unimax Switch, Div. Maxon | Electronics Corp. | |

Table 6-22. Code List of Manufacturers

| Code No. | Manufacturer | Address | Code No. | Manufacturer | Address | Code No. | Manufacturer | Address | Code No. | Manufacturer | Address |
|----------|--|---------------------|----------|---|--------------------------|----------|--|----------------------|----------|--|----------------------|
| 8C583 | Hammarlund Co., Inc. | New York, N.Y. | 83821 | Loyd Scruggs Co. | Festus, Mo. | 93369 | Robbins and Myers, Inc. | New York, N.Y. | 98731 | General Mills Inc., Electronics Div. | Minneapolis, Minn. |
| 6D510 | Stevens, Arnold, Co., Inc. | Boston, Mass. | 84171 | Aico Electronics Inc. | Great Neck, N.Y. | 93410 | Stevens Mfg. Co., Inc. | Mansfield, Ohio | 98821 | North Hills Electronics, Inc. | Glen Cove, N.Y. |
| E1030 | International Instruments Inc. | Orange, Conn. | 84396 | A.J. Glesener Co., Inc. | San Francisco, Calif. | 93788 | Howard J. Smith Inc. | Port Monmouth, N.J. | 98825 | Semiconductor Div. of Clevite Corp. | Waltham, Mass. |
| E1073 | Grayhill Co. | LaGrange, Ill. | 84411 | TRW Capacitor Div. | Ogallala, Neb. | 93929 | G.V. Controls | Livingston, N.J. | 98978 | International Electronic Research Corp. | Burbank, Calif. |
| E1C55 | Triad Transformer Corp. | Venice, Calif. | 84970 | Sarkis Tarzian, Inc. | Bloomington, Ind. | 94137 | General Cable Corp. | Bayonne, N.J. | 99109 | Columbia Technical Corp. | New York, N.Y. |
| E1212 | Winchester Electronics Co., Inc. | Norwalk, Calif. | 85454 | Beechon Molding Company | Brenton, N.J. | 94144 | Raytheon Co., Comp. Div., Ind. Comp. Operations | Quincy, Mass. | 99313 | Varian Associates | Palo Alto, Calif. |
| E1349 | Military Specification | | 85471 | A.B. Boyd Co. | San Francisco, Calif. | 94148 | Scientific Electronics Products, Inc. | Loveland, Colo. | 99515 | Marshall Ind. Elect. Products Div. | San Marino, Calif. |
| E1415 | Walker Products, Inc. | Cleveland, Ohio | 85474 | R.M. Bracanovic & Co. | San Francisco, Calif. | 94154 | Tung-Sol Electric, Inc. | Newark, N.J. | 99707 | Control Switch Division, Controls Co. of America | El Segundo, Calif. |
| E1463 | International Recycler Corp. | El Segundo, Calif. | 85660 | Koated Kords, Inc. | Handen, Conn. | 94197 | Curtiss-Wright Corp., Electronics Div. | East Paterson, N.J. | 99800 | Deleman Electronics Corp. | East Aurora, N.Y. |
| E1511 | The Artpax Products Co. | Cambridge, Mass. | 85911 | Seamless Rubber Co. | Chicago, Ill. | 94222 | South Chester Corp. | Chester, Pa. | 99848 | Wilco Corporation | Indianapolis, Ind. |
| E1560 | Barry Controls, Div. Barry Wright Corp. | Watertown, Mass. | 86197 | Clifton Precision Products Co., Inc. | Clifton Heights, Pa. | 94310 | Tru-Dim Products | Huntington, Ind. | 99934 | Redbeam, Inc. | Boston, Mass. |
| E2242 | Carder Precision Electric Co. | Skokie, Ill. | 86579 | Precision Rubber Products Corp. | Dayton, Ohio | 94330 | Memcor Components Div. | Bellwood, Ill. | 99942 | Hoffman Electronics Corp., Semiconductor Div. | El Monte, Calif. |
| E2917 | Spelv-Faraday Inc., Cooper Hewitt Electric Div. | Hoboken, N.J. | 86684 | Radio Corp. of America, Electronic Comp. & Devices Div. | Harrison, N.J. | 94682 | Worcester Pressed Aluminum Corp. | Worcester, Mass. | 99957 | Technology Instrument Corp. | Newbury Park, Calif. |
| E2142 | Jeffers Electronics Division of Speed Carbon Co. | Du Bois, Pa. | 87216 | Phitco Corporation (Lansdale Division) | Lansdale, Pa. | 95023 | George A. Philbrick Researchers, Inc. | Boston, Mass. | | | |
| E2170 | Fauchild Camera & Instl. Corp., Defense Prod. & Division | Clinton, N.J. | 87473 | Western Fibrous Glass Products Co. | San Francisco, Calif. | 95236 | Alives Products Corp. | Miami, Fla. | | | |
| E2209 | Maguire Industries, Inc. | Greenwich, Conn. | 87564 | Van Waters & Rogers Inc. | San Francisco, Calif. | 95238 | Continental Connector Corp. | Woodside, N.Y. | | | |
| E2219 | Sylvania Electric Prod. Inc., Electronic Tube Division | Emporia, Pa. | 87930 | Tower Mfg. Corp. | Providence, R.I. | 95263 | Leecraft Mfg. Co., Inc. | Long Island, N.Y. | | | |
| E2376 | Aston Division, Renwall Industries Inc. | East Newark, N.J. | 88140 | Cutter-Hammer, Inc. | Lincoln, Ill. | 95264 | Lerco Electronics, Inc. | Burbank, Calif. | | | |
| E2389 | Switchcraft, Inc. | Chicago, Ill. | 88220 | Gould-National Batteries, Inc. | St. Paul, Minn. | 95265 | National Coil Co. | Sheridan, Wyo. | | | |
| E2647 | Metals & Controls Inc., Spencer Products | Attleboro, Mass. | 88421 | Federal Telephone & Radio Corp. | Ciilton, N.J. | 95275 | Vitanom, Inc. | Bridgeport, Conn. | | | |
| E2558 | Phillips-Advance Control Co. | Joliet, Ill. | 88598 | General Mills, Inc. | Buffalo, N.Y. | 95348 | Gordos Corp. | Bloomingfield, N.J. | | | |
| E2866 | Research Products Corp. | Madison, Wis. | 88665 | United Transformer Co. | Chicago, Ill. | 95354 | Melhode Mfg. Co. | Chicago, Ill. | | | |
| E2877 | Robot Mfg. Co., Inc. | Woodstock, N.Y. | 90179 | US Rubber Co., Consumer Ind. & Plastics Prod. Div. | Passaic, N.J. | 95712 | Dage Electric Co., Inc. | Franklin, Ind. | | | |
| E2893 | Vector Electronic Co. | Glendale, Calif. | 90970 | Besing Engineering Co. | San Francisco, Calif. | 95887 | Weckesser Co. | Chicago, Ill. | | | |
| E3053 | Western Washo Mfg. Co. | Los Angeles, Calif. | 91250 | Connor Spring Mfg. Co. | San Francisco, Calif. | 96067 | Huggins Laboratories | Sunnyvale, Calif. | | | |
| E3058 | Cae Fastenei Co. | Cambridge, Mass. | 91345 | Miller Dial & Nameplate Co. | El Monte, Calif. | 96256 | Thordarson-Meissner Div. of Maguire Industries, Inc. | Olean, N.Y. | | | |
| E3086 | New Hampshire Ball Bearing, Inc. | Peterborough, N.H. | 91418 | Radio Materials Co. | Chicago, Ill. | 96295 | Solar Manufacturing Co. | Los Angeles, Calif. | | | |
| E3125 | General Instrument Corp., Capacitor Div. | Darlington, S.C. | 91506 | Augal Inc. | Attleboro, Mass. | 96330 | Carlton Screw Co. | Chicago, Ill. | | | |
| E3148 | ITI Wire and Cable Div. | Los Angeles, Calif. | 91637 | Dale Electronics, Inc. | Columbus, Neb. | 96341 | Microwave Associates, Inc. | Burlington, Mass. | | | |
| E3186 | Victory Engineering Corp. | Sprigfield, N.J. | 91662 | Elco Corp. | Willow Grove, Pa. | 96501 | Excel Transformer Co. | Oakland, Calif. | | | |
| E3298 | Bendix Corp., Red Bank Div. | Red Bank, N.J. | 91737 | Gremas Mfg. Co., Inc. | Wakefield, Mass. | 97464 | Industrial Relating Ring Co. | Irvine, N.J. | | | |
| E3315 | Hubbell Corp. | Mundelein, Ill. | 91827 | K F Development Co. | Redwood City, Calif. | 97539 | Automatic & Precision Mfg. | Englewood, N.J. | | | |
| E3330 | Smith, Hernae H., Inc. | Brooklyn, N.Y. | 91929 | Honeywell Inc., Micro Switch Div. | Freeport, Ill. | 97979 | Neon Resistor Corp. | Yonkers, N.Y. | | | |
| E3385 | Central Screw Co. | Chicago, Ill. | 91961 | Nahm-Bros. Spring Co. | Oakland, Calif. | 97983 | Littton System Inc., Adler-Westric Commun. Div. | New Rochelle, N.Y. | | | |
| E3501 | Gavitt Wire and Cable Co., Div. of Amerace Corp. | Brookfield, Mass. | 92180 | Tru-Connector Corp. | Peabody, Mass. | 98141 | R-Tronic, Inc. | Jamaica, N.Y. | | | |
| E3594 | Burnsop Corp., Electronic Tube Div. | Plainfield, N.J. | 92367 | Elgeet Optical Co., Inc. | Rochester, N.Y. | 98159 | Rubber Tech, Inc. | Gardena, Calif. | | | |
| E3740 | Eveready Div. National Carbon Div., Union Carbide Corp. | New York, N.Y. | 92196 | Universal Industries, Inc. | City of Industry, Calif. | 98220 | Francis L. Moseley | Pasadena, Calif. | | | |
| E3777 | Model Eng. and Mfg., Inc. | Huntington, Ind. | 92607 | Tensolite Insulated Wire Co., Inc. | Tarrytown, N.Y. | 98278 | Microdot, Inc. | So. Pasadena, Calif. | | | |
| | | | 93332 | Sylvania Electric Prod. Inc. | Woburn, Mass. | 98291 | Sealectro Corp. | Mamaroneck, N.Y. | | | |
| | | | | | | 98405 | Carad Corp. | Redwood City, Calif. | | | |

THE FOLLOWING H-P VENDORS HAVE NO NUMBER ASSIGNED IN THE LATEST SUPPLEMENT TO THE FEDERAL SUPPLY CODE FOR MANUFACTURERS HANDBOOK.

| | | |
|-------|---|----------------------|
| 0000F | Malco Tool and Die | Los Angeles, Calif. |
| 0000M | Western Coil Div. of Automatic Ind., Inc. | Redwood City, Calif. |
| 0000Z | Willow Leather Products Corp. | Newark, N.J. |
| 000AA | British Radio Electronics Ltd. | Washington, D.C. |
| 000AB | ETA | England |
| 000AK | Siemens-America Components Div. | White Plains, N.Y. |
| 000BB | Precision Instrument Components Co. | Van Nuys, Calif. |
| 000MM | Rubber Eng. & Development | Hayward, Calif. |
| 000NN | A "N" D Mfg. Co. | San Jose, Calif. |
| 000QQ | Coollron | Dakland, Calif. |
| 000SS | Control of Elgin Watch Co. | Burbank, Calif. |
| 000WW | California Eastern Lab. | Burlington, Calif. |
| 000YY | S.K. Smith Co. | Los Angeles, Calif. |

From: FSC, Handbook Supplements
H4-1 Dated DECEMBER 1964
H4-2 Dated MARCH 1965

APPENDIX I - MANUAL CHANGES

This manual applies directly to 5100A Frequency Synthesizers having serial number prefix 540. This manual with the following changes also applies to 5100A Frequency Synthesizers having serial prefix numbers 351, 401, 408, 420, 427, 442, and 520. To adapt this manual to instruments with serial number prefixes other than 540, note changes as follows:

| Instrument Serial No. Prefix | Change No. |
|------------------------------|------------------|
| 520 | 1 |
| 442 | 1, 2 |
| 427, 420 | 1, 2, 3 |
| 408 | 1, 2, 3, 4 |
| 401 | 1, 2, 3, 4, 5 |
| 351 | 1, 2, 3, 4, 5, 6 |

Note: 1850-0153 is the recommended replacement for Q1 in all
 P/N 05100-6039 Mixer Board Assemblies (A21A2).
 2100-0941 is the recommended replacement for R15 in
 all Multiplier Board Assemblies (A13-A18A1).

CHANGE 1: Figure 5-17 , Assemblies A5-A11A2, 05100-6024

C81 was 47 pf, ~~Q~~ Part No. 0160-0334
 C82 was 80 pf, ~~Q~~ Part No. 0160-0335
 R66 was 1200 ohms, ~~Q~~ Part No. 0683-1225
 R62 was 220 ohms, ~~Q~~ Part No. 0683-2215
 L69 was 10 μ Hy ~~Q~~ Part No. 05100-6214

CHANGE 2: Figure 5-17 , Assemblies A5-A11A1, 05100-6023

C33 was .01 μ f, ~~Q~~ Part No. 0160-2055
 R23 replaces C31, 8-50 pf, ~~Q~~ Part No. 0130-0017

Figure 5-18, Assembly A12A1, 05100-6023

C33 was .01 μ f, ~~Q~~ Part No. 0160-2055
 R23 replaced C31, 8-50 pf, ~~Q~~ Part No. 0130-0017

Figure 5-17 , Assemblies A5-A11A2, 05100-6024

RT1 was deleted
 CR54, CR55, CR56 were added between emitter of Q54 and ground
 R66 was 1800 ohms ~~Q~~ Part No. 0683-1825
 R67 was 150 ohms, ~~Q~~ Part No. 0757-0284
 C80 was 160 pf, ~~Q~~ Part No. 0140-0218

Figure 5-18 , Assembly A12A2, 05100-6047

R63 was 1620 ohms, ~~Q~~ Part No. 0757-0428
 R64 was 1000 ohms, ~~Q~~ Part No. 2100-0755

Figure 5-29, Assembly A24A1, 05100-6044

R16 was 3300 ohms, ~~Q~~ Part No. 0758-0010

Figure 5-30, Series Number on A25 module was 330 Assembly A25A2, 05100-6032

R11, R15 were 499 ohms, ~~Q~~ Part No. 0698-0022
 CR1, CR2 were 6.2V breakdown, ~~Q~~ Part No. 1902-0081

CHANGE 4: Figure 5-29

A24 Module was series 330, Assembly A24A1, 05100-6044

C41, C44 were .02 μ f, ~~Q~~ Part No. 0150-0012
 C42, C43, were 1000 pf, ~~Q~~ Part No. 0140-0152

APPENDIX (cont'd)

CHANGE 5: Table 1-1. Specifications

Cable Assembly furnished was ~~is~~ Part No. 05100-6157/8
05100-6157/8

CHANGE 6: Figures 5-17 and 5-18, Assemblies A5-A12A1, 05100-6023

Q5 was 2N963, ~~is~~ Part No. 1850-0119

R15 was 1000 ohms, ~~is~~ Part No. 0683-1025

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